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ABSTRACT

A report of the Illinois Gifted Program Evaluation, the document first presents origins, policies, and scope of the reimbursement section of the Illinois Plan for Program Development for Gifted Children. Outlined is the evaluation design, in which subjects were 34 school districts representing a 10% stratified random sample of 340 districts. Each of the 34 had received state funds for 2 or more years. Data gathered on the best gifted program in each district included director, teacher, and student interviews, class activities questionnaires, classroom observation, and various documents. Data for five of the programs are presented as case studies. Described are school setting, circumstances for starting program, purposes, activities, and a typical day in class, with teacher and student comments reported. Evaluators' interpretation and discussion of each program is offered; judgment of program value is made on the basis of stated standards. Finally, findings from previous examinations of specific aspects of the reimbursement phase of the Illinois program are discussed, along with two aspects not previously reported: analysis of classroom verbal interaction and assessment of inservice training programs. (KW)

THE GIFTED CLASSROOM

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and Curriculum Evaluation
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OFFICE OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION

Michael J. Bakalis, Superintendent of Public Instruction

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REPORTS OF THE ILLINOIS GIFTED PROGRAM EVALUATION

Report No. 1: Policies of the Illinois Plan for Program Development for Gifted Children, David L. Colton. Center for Educational Field Studies, Washington University, St. Louis, Missouri, August 1968. 125 pages.

Report No. 2: Training Materials for Gifted Evaluation Institute, University of Illinois, July 29-August 9, 1968, designed by Douglas Sjogren with assistance from Robert E. Stake, Ernest R. House, Terry Denny, and Stephen Lapan in cooperation with the Center for Instructional Research and Curriculum Evaluation. Cooperative Educational Research Laboratory, Inc., Northfield, Illinois, August 1968. 178 pages.

Report No. 3: A Preliminary Assessment of the Illinois Gifted Program, Ernest R. House, Stephen Lapan, and Thomas Kerins. Cooperative Educational Research Laboratory, Inc., Northfield, Illinois, October 1968. 45 pages.

Report No. 4: The Report on the 1968 Summer Institute on Evaluation, University of Illinois, July 29-August 9, 1968, Raynard Dooley, Ernest R. House, Stephen Lapan, and Thomas Kerins. Cooperative Educational Research Laboratory, Inc., October 1968. 95 pages.

Report No. 5: The Visibility and Clarity of Demonstrations, and Appendices, (published as a separate volume) Ernest R. House, Thomas Kerins, Stephen Lapan, and Joe M. Steele. Cooperative Educational Research Laboratory, Inc., Northfield, Illinois, May 1969. 80 pages.

Report No. 6: Dimensions of the Class Activities Questionnaire, Joe M. Steele. Center for Instructional Research and Curriculum Evaluation (CIRCE), University of Illinois, Urbana, Illinois, October 1969. 28 pages.

Report No. 7: The Illinois Demonstration Centers--The Visitors' View, Thomas Kerins, Ernest R. House, Stephen Lapan, Joe M. Steele. CIRCE, University of Illinois, Urbana, Illinois, October 1969. 62 pages.

Report No. 8: After the Visit: The Impact of Demonstration, Thomas Kerins, Ernest R. House, Stephen Lapan, Joe M. Steele. CIRCE, University of Illinois, Urbana, Illinois, May 1970. 38 pages.

Report No. 9: Instructional Climate in Illinois Gifted Classes, Joe Milan Steele, Ernest R. House, Stephen Lapan, Thomas Kerins. CIRCE, University of Illinois, Urbana, Illinois, August 1970. 55 pages.

Report No. 10: The Development of Educational Programs: Advocacy in a Non-Rational System, Ernest R. House, Joe Milan Steele, Thomas Kerins. CIRCE, University of Illinois, Urbana, Illinois, November 1970. 30 pages.

Report No. 11: The Demonstration Center: An Appraisal of the Illinois Experience, Ernest R. House, Thomas Kerins, Joe Milan Steele. CIRCE, University of Illinois, Urbana, Illinois, December 1970. 44 pages.

I. THE ORIGINS, POLICIES AND SCOPE OF THE ILLINOIS REIMBURSEMENT PLAN FOR GIFTED PROGRAM DEVELOPMENT

ORIGINS

Both educators and legislators in Illinois were convinced of the need for programs for gifted or talented children in the early 1960's. Studies showed that a large number of Illinois schools made virtually no special provisions for their gifted and talented youth. These students were reading the same materials, attending the same classes, and being exposed to the same teaching methods as students with more ordinary intellectual capacities. This occurred in spite of (1) considerable research evidence that gifted students need and can profit from specialized materials and instruction and in spite of (2) professed beliefs in educating each child to his maximum potential and individualizing instruction.

Dr. James Gallagher, who played a vital role in the development of the program and in the research on gifted children, stated that:

> The education of gifted students is not a new subject of educational discussion. Such concern can be traced in the literature for at least one-half century. A casual reading of the literature will reveal the same complaints--low standards for gifted children, unimaginative teaching and planning, and inadequate stimulation of their mental potential. (Research Summary, p. 1)

Gallagher believed that the education of bright and talented youth should be limited only by their capacity for learning, and not by schools which fail to develop adequate programs for their needs and abilities.

A special Study Commission was created which eventually provided the ideas that formed the Illinois Plan for Program Development for Gifted

Children: a large-scale, state-supported program for gifted students which began during the 1963-64 school year. This program rests on the assumption that local schools can and will imporve their programs when the following resources are available: money, specialized training programs, models of good practice, consultants, and knowledge about the effects of different approaches to educating the gifted. The Illinois Plan provides all of these resources: reimbursement, which provides school districts with money on a formula basis to operate a program for students identified as gifted; training, which provides funds to train teachers, usually in summer institutes or through local in-service activities; demonstration, which provides extra money for districts to demonstrate selected programs; experimental, which supports applied research, development and evaluation in the area of the gifted; and state staff, consultants to oversee the entire program.

POLICIES

The two key policies that have shaped the reimbursement section of the Illinois Plan into a unique structure are the freedom local districts have to establish their own norms for student identification and the encouragement of local program development.

Policy A: Gifted Children Identification

> ...gifted children are those "whose mental development is accelerated beyond the average to the extent they need and can profit from specially planned educational services." (1963 statute)

In contrast to the few states that have a comprehensive program, notably North Carolina and California, Illinois does not insist on a single

statewide criterion for identification of "giftedness." Instead of defining a gifted child as one who has a 120 IQ, the Illinois Plan encourages selection on the basis of the relationship of the student's ability to the ability of the others in the group from which he is selected.

In addition to the identification and maximum development of gifted and talented children, the Illinois Plan stresses the saving of talent by identification and development of those pupils who, despite having high ability, have not acquired the necessary knowledge and skills to fully utilize this ability.

As a consequence of this policy of "open identification," the Illinois Plan did not limit participating schools to the development of activities which would lead only to academic achievement. Other desirable characteristics encouraged by the Illinois Plan were leadership potential, intellectual curiosity, divergent thinking ability, and interests in creative activities and the fine arts.

Policy B: Local Development

> The purpose of the reimbursement portion of the Illinois Plan is to encourage and assist the public schools of Illinois in the development and improvement of educational services for gifted children. (RPA8)

Reimbursement funds were not to be spent for the maintenance of existing programs. However, current programs could be continued as long as there was evidence of a development approach with continued improvement as a goal. The State therefore has established a policy of constantly urging the local schools to develop new or different programs for their talented youth. Although at time ambiguous statements have been issued regarding the import-

ance of program improvement, the main thrust of the reimbursement program has been aimed at discouraging local school personnel who merely seek support for existing programs and who have no desire to change.

In its attempt to help local personnel develop programs, the Illinois Plan has encouraged a "thinking approach" toward the classroom.

> Programs should be designed not only for learning but they should also be designed for thinking. Simple recall and memory work should be strongly supplemented by other types of mental operations such as...critical, creative, constructive, independent, logical, liberal, and analytical types of thinking. (See Colton Report, #1)

The policy of the Illinois Plan has been that "Education should place emphasis on learning how to think instead of what to think. (See Colton Report, #1)

SCOPE OF REIMBURSEMENT PARTICIPATION

A) Participating Schools

Any school district in the State is eligible to submit a proposal requesting reimbursement money from the State. As Figure 1 illustrates, approximately one out of every three districts in the State of Illinois has been a participant in the Illinois Plan since the 1967 school year. This has remained the case even though the percentage of funds paid to the districts has dropped from 100% of reimbursable expenses during the years 1963 through 1969 to 62% in 1970. (As not enough money was available to cover the expenses of participating districts in 1970, percentage of funds reimbursed was based on the total amount budgeted for reimbursement divided by the total amount requested.)

FIGURE 1

Number of Participating Schools Per Year

School Year	Total Districts Participating in Gifted Programs	Total Districts in Illinois	Percentage of District Involvement
1963-64	78	1430	5.4%
1964-65	110	1386	7.9%
1965-66	310	1347	23.0%
1966-67	325	1340	24.2%
1967-68	452	1315	32.3%
1968-69	410	1279	32.0%
1969-70	411	1227	33.5%
1970-71	365	1175	30.9%

In any categorical aid program some attrition can be expected due to inability of districts to carry off the program they planned. A study of the 150 districts that solicited funds at some time and then dropped out revealed that the main reasons were that funds from the state were insufficient; there was a lack of trained personnel at the local level; and there were insufficient funds available at the local level. In the Illinois Plan, almost 75% of the districts that received reimbursement money had an operational program. Some of the remaining districts invested their efforts in teacher training programs and didn't seem to get around to special classes for students, while a few districts subverted the funds and did nothing.

B) Range of Reimbursement Programs

The Illinois experiment, from a statewide perspective, has influenced the development of a great diversity of programs for the gifted. Districts across the State have chosen to initiate programs for the gifted at every level from kindergarden to grade twelve. Program content ranges from math to the fine arts and from group-centered social studies to independent studies in science. However, language arts is the subject area for over one-third of the gifted programs in the State, and if social studies is added half of the programs are accounted for.

When the perspective is changed from the state to that of an individual district, the picture is less sanguine. Where the above special provisions do exist for gifted children, they are often limited to a few grade levels or subject areas and often to just one school within the district. Districts with comprehensive K-12 gifted programs are very rare. This means that in many cases individual districts do not provide for all gifted children in the districts, do not have classes at all grade levels, do not follow children from one grade level to another, and do not offer special provisions across a range of subject areas. Rarely do local programs provide a range of options for many varieties of giftedness (e.g., highly achieving, highly creative, high potential-moderately achieving, specially talented, the very highly gifted, talent retrieval programs, etc.).

II. THE EVALUATION DESIGN

THE PROBLEM OF JUDGING SUCCESS

The very diversity of Illinois gifted programs made the problem of evaluation extremely difficult. Programs which cut across many grade levels and subject areas were not directly comparable. Traditional measures, such as achievement tests, reveal only one aspect of a program.

The rationale for evaluating the programs was based on Stake's model of evaluation*. A central tenet was to amass a large amount of discriptive data about individual programs rather than relying on data produced by one or two instruments. Consequently more than twenty-five different kinds of data were collected by various methods--interview schedules, questionnaires, and observation schedules. For some programs the data were combined into integrated case studies in order to give an in-depth view of local programs. Based on these data, judgments of quality were then made about each program. These results and other data were summed across programs in order to give a comprehensive picture of the whole State effort.

DEFINING A PROGRAM

The term "program" has been used to describe everything from an activity within a single classroom to a collection of treatments covering many classes and grade levels as well as teacher training and administrative procedures.

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*Stake, Robert E. The Countenence of Educational Evaluation. Teachers' College Record, 68: 523-540; 1969.

The term is also applied at many levels of generality, e.g. the State "program," district "program," school "program," playground "program." Usually a collection of diverse and sometimes unrelated activities is labelled by the district as its gifted program. A limited and common definition of the term is necessary for evaluation.

The term "program" was therefore defined to mean the specific instructional treatment provided for a particular group of gifted children. More formally stated,

> An educational program is an ongoing sequence of encounters of student(s) with instructional media (including staff), usually of several months duration, in which there is an identifiable theme or rationale and for which some specifiable outcomes can be generally expected.

When applied, this usually meant the classes for the gifted at one grade level and subject area. Often it meant the activities at one school in the district. Sometimes it meant one class.

Defining program in this way, we asked the districts sampled to show the best program they had operating. A second condition was to include only districts which had participated in reimbursement for more than one year. This restricted definition of program is used only in reference to the local school's activities which involve gifted students. Elsewhere the term is used to refer to the entire collection of activities related to educating the gifted, for example, the State's gifted program.

THE SAMPLE

The subjects in this study were 34 school districts representing a 10% sample of 340 districts in Illinois. Since the study was part of an

evaluation of the Illinois Gifted Program, only districts receiving money from the State were included in the population. The number of local gifted programs operating without State funds had been previously determined to be small. The population was further restricted by excluding all districts which were participating in the State program for the first time, the assumption being that first year districts would have very little underway. Hence, the population was restricted to the 340 districts receiving State funds for two or more years.

A stratified random sample was developed with cut-off point of 1375 students for samll/medium districts and 4939 for medium/large districts. The population was also stratified on the basis of legal type--elementary, secondary, and unit districts. Using these strata a 10% sample of 34 districts was randomly drawn proportional to the population.

DATA COLLECTION

Program directors were notified that an evaluation team would visit their school and after some persuasion and guarantees that the identity of the districts would not be revealed, all 34 districts cooperated.

The main data collected were the following (See Figures 2 and 3):

1. Director Interview--A two-hour structured interview with the program director which contained several questions on the program activities, goals, standards for student success, student identification, teacher training, teacher selection, teaching materials, and evaluation procedures.
2. Teacher Interview--A one-hour interview with each of two teachers

Data Collected on Each Program in Sample

Director	Teachers	Students	Documents
Director--2 hr. Interview (See Figure 3 and Appendix A)	Teacher #1--1 hr. Interview (See Figure 3 and Appendix B)	Student #1--½ hr. Interview (See Figure 3 and Appendix C)	Original proposal submitted to State
Director Fact Sheet (List of other gifted programs in district)	Teacher #2 (Same as above)	Student #2 (Same as above)	Budget of program
Seven page mail survey form	Teacher Fact Sheet (Training and background)	Questions students ask in class	Description of school district (demographic data)
List of behavioral objectives	Class Activities Questionnaire	Written open-ended comments from all students about class	
Class roster	Unstructured observation of one class	Class Activities Questionnaire from all students	
Class Activities Questionnaire	Questions teacher asks in class		
	Flanders Interaction Analysis on class		
	Copy of mid-term and final exams		

FIGURE 3

Data Collected Through Interviews

Data	Source		
	Students	Teachers	Director
1. Activities of class	X	X	X
2. Goals of class	X	X	X
3. Student success	X	X	X
4. Teacher rationale	X		X
5. Student evaluation	X	X	
6. Student identification	X		X
7. Influence of outside sources		X	X
8. Training of teacher and director		X	X
9. Unintended outcomes of class		X	
10. Teacher selection			X
11. Materials used in class			X
12. Evaluation of class			X
13. Director role in program		X	
14. Best things about class	X		
15. Changes in class	X		

from the program on the same topics as the director interview plus the role of the director and unintended outcomes of the class.

3. Student Interviews--A half-hour interview with each of two students in the program including the goals, activities, student success, student evaluation, plus the best things about the class and what the student would change if given the chance (See Figure 3).

4. The Class Activities Questionnaire--An evaluation instrument filled out by the program director, teachers and all students which gives a reading on:

   a. Seven cognitive factors derived from Bloom's Taxonomy.

   b. Seven affective factors such as enthusiasm, independence, amount of discussion opportunity, etc.

   c. Estimates of amount of teacher talk and homework.

   d. Open-ended comments about the class.

5. Classroom Observation--One class period was observed during which a system for categorizing teacher and student talk was used and also all student and teacher questions were recorded. In addition the observer described the classroom setting and reported his subjective impression of the class.

6. Documents--The original proposal submitted to the State, the proposed budget for the program, a min-term and final exam from each teacher.

Considerable redundancy was built into the instruments in order to compare responses from various sources. The end result of this data collection was an information base which provided the evaluators with the primary

measures needed to rate the quality of the program. The data was also extensive enough to enable each gifted program to be examined as a separate case study or history. In the following chapter, five of these case studies are presented.

III. FIVE CASE STUDIES

The tables and lists of evaluation reports are like the fragments of pottery and bone in an archeologist's sieve: dry and dead. The following five case studies of gifted programs attempt to breathe some life back into the data. Drawing on a bulging file of records, interviews, and observer notes, an in-depth description of a district's best gifted program is presented. (See Figure 4 on following page.)

First, the school setting and circumstances for starting the program are described. The purposes and activities of the program are then reported using the phrases and language of the director, teacher and students. An illustration of a typical day in class is reconstructed from the observer's records. Actual comments of teachers and students are also liberally added to create some sense of the people involved and their perceptions.

Much effort has been spent to make these cases accurate and honest portraits. They do not recapture the full reality and complexity of the classroom. Yet we feel these case studies do represent the actual programs without excessive distortion. The particulars are presented first. The evaluators' interpretation and discussion of each program is presented last as a separate section.

While the interpretation section often summarizes and discusses the facts presented in the body of the case study, it goes beyond that. A judgment of the value of the program is made. To do this the standards described in the next chapter are applied. The reader may not wish to read all of the case studies before he moves to the case study analysis in Chapter IV. However, the standards and analysis of themes generated by the case studies would be more meaningful if at least one, preferably two, of the following cases were read.

FIGURE 4

Case Studies of Selected Gifted Programs

Name	Grade	Subject	Program	Rating
1. River Meadow: "Time Out For Creativity"	6	Language Arts (Writing, discussion, Jr. Great Books)	Creative thinking and discussion activities in small groups	A - high quality
2. Parchland: "No Royal Road to Learning"	11-12	Math (College Algebra)	Honors Math leading to college credit	C - limited quality, traditional
3. Villa Dunes: "Where the Students Learn by Teaching"	11	Social Studies (American Studies, History, Economics, and Government)	Student-led discussion in small and large groups	A - high quality
4. Baumburg: "A Prussian Approach to Independent Study"	4	Math	Independent study in learning center	C - limited quality, inconsistent
5. Birchville: "A Program for Precocious Scientists"	2-5	Science	Independent study and group discussion in learning center	A - high quality

CASE STUDY #1

RIVER MEADOW: TIME OUT FOR CREATIVITY

PROGRAM: Ideas Development Laboratory (Encouraging Creativity and Reflective Thinking) in the Language Arts

GRADE LEVEL: 6th

PROGRAM SIZE: 2 teachers, 73 students in 7 groups at 3 different K-6 schools

CLASS SIZE IN THIS CASE STUDY: 12 students at Pawnee School

TIME: 60 minutes daily

COMMUNITY SETTING: Wealthy older suburb of Chicago with an all-white population. Community is entirely residential--no industry or commercial zoning--so the tax base for the schools is not strong.

SCHOOL SETTING: Elementary school district that has six K-6 and one 7-8 Jr. High School with an enrollment of 3600 students. Pawnee School has 400 pupils.

PROGRAM DESCRIPTION

Children in this program attent the Ideas Development Laboratory for one hour daily while their regular class is studying language arts. The program is operated in three schools and draws from eleven sixth grade classrooms. No more than a dozen students are in each class.

Students are selected primarily by Torrance Creative Thinking Test scores, with IQ, language achievement scores, and teacher recommendations secondary. As in most programs, no clear-cut system is used for combining this information. This type of selection procedure was originally chosen because many

children were felt to have talent but did not respond well to accelerated classes--particularly to pressures to produce academically and to make grades. The program is intended to provide a time out from such pressures. The reason the sixth grade was chosen is that Torrance's research showed a drop in creative thinking in grades four and seven. It was felt the program might help to counteract that pattern.

The program was developed five years ago by a teacher who has since left the district. Strong support for the program was given by a principal (now superintendent). Two teachers now are involved. (It seems important in developing programs to have two people involved so they can support one another.) The case study will consider only one of the teachers, Harry Beckon. He has taught a sixth grade class in the district for over ten years. His background is in the liberal arts (sociology and psychology). He has been in various in-service training sessions on creativity and independent study as well as special training in discussion techniques required by users of Junior Great Books materials.

ONE DAY IN THE CLASS

(Based on actual observation)

Twelve students are sitting in a circle in a small room which has hanging plants, an aquarium, and old farm tools around. Mr. Beckon starts the students brainstorming about what a snowflake means to them and about butterflies. They are then asked for similarities between the two. The children compare many other things. These ideas are to be used in poems they are writing. The teacher asks almost two dozen questions like, "What does bark

make you think of?" "How does this connect with this?" "How does it feel when you put it in your hand?" "How would you feel if you were a tree?" During this phase of the class session, the teacher is giving a few directions, talking and asking many questions about half the time, while another half of the time students are talking and responding to questions. Another 10% of the time the teacher is accepting the students' ideas and praising students for their ideas. (For a complete table showing the analysis of teacher and student talk throughout the class period, see box below.)

During the middle of the period the students experience considerable difficulty in producing ideas. Half the time there is s lence. The teacher lets them work in teams while he helps and motivates.

Analysis of Teacher and Student Talk at Three Points in the Class Period

	Near First of Period	Mid Period	Near End of Period	Summary of Total Period
Type of teacher statements				
Accepts Feelings	0%	0%	1%	.3%
Praise	3%	2%	7%	4%
Accepts Ideas	7%	5%	2%	5%
Questions	14%	10%	3%	9%
Lecture	19%	9%	7%	11%
Gives Directions	4%	3%	5%	4%
Criticizes	0%	0%	0%	0%
% OF TIME TEACHER TALKS	47%	29%	25%	33%
Type of student statements				
Response to teacher	15%	15%	3%	11%
Self-initiated	24%	6%	68%	33%
% OF TIME STUDENTS TALK	39%	21%	71%	44%
% OF SILENCE	14%	50%	4%	23%
	100%	100%	100%	100%

In the last part of the class students recite some of their poems. The comments of the teacher are half questions and comments and half praise and acceptance of student ideas and feelings.

For the total class period the students talk 44% of the time. Relatively little of this talk is simply responding directly to teacher questions. Instead, much is self-initiated. Students are introducing their own ideas and listening and talking with each other. This kind and amount of student involvement is unusual compared to class averages, even among gifted programs.

For the whole class period the teacher talks 33% of the time--very low compared to teacher averages in other gifted and average classes we have observed. This small amount of talk (and the kinds of comments involved) is consistent with the philosophy and goals of the teacher. A considerable amount of teacher talk is praising and accepting ideas and feelings of the students. There are no chastising statements at all.

GOALS

The main goals are to encourage creativity and to get students to think. The ideal is to get students to become more confident in producing and using their own ideas. The students are eventually expected to challenge and question the teacher. They are also expected to develop skills in writing and speaking and to learn how to focus on a problem.

The teacher sees the successful student as one who wants to continue activities such as writing, and to apply techniques such as brainstroming to other subject areas. The student should develop an inquiring attitude.

ACTIVITIES

As in most language arts classes, the student read, do much discussion, give reports and talks, and write stories and poems. Once a week they have a Junior Great Books discussion. However, they seem to approach these tasks somewhat differently than a normal class. They prepare for these activities by techniques such as brainstorming and forced association. (See Teacher Interview.) For example, the students are asked to note the similarities between a snowflake and a butterfly. They make a game out of this task. Then they are asked to write a poem on the subject. Also they are usually free to choose their own topics. For this aspect the class uses "creativity" exercises such as those of Torrance & Myers, and Gordon.

At other times the students are asked to draw implications from reading materials. The main requirement of the materials is that they have multiple meanings which force students to "dig." That is, the materials are complex enough that there is no one "right" answer. The teacher asks interpretative questions to stimulate the class. However, the teacher talks less of the time than the average teacher. There is much more student exchange. In this talk, the student is expected to back up his opinion with facts and to support his ideas with evidence.

The teacher tries to get students to draw upon and rely upon their own experiences. He tries to get them to consider problems that puzzle adults, not just make-believe issues. As he sees it, he is trying to create an atmosphere of "psychological safety" where the students can really develop their own ideas. In this atmosphere ideas can be written about and spoken about freely. The teacher is not after any particular idea except the production

of many ideas. The main expectation is that students develop a fluency of ideas. In producing these ideas and trying to use them, it is also important that the teacher himself serve as a model of thinking and considering and listening. As the teacher sees it, the class is a balance between structure and no structure. Too much structure leads to inhibition of ideas, as in a normal classroom. Too little structure leads to chaos.

Consistent with this psychological safety, no tests or grades are given. The teacher evaluates the student's work by talking to him about it. For example, the teacher may have lunch with an individual student to discuss a poem or talk the student is to give. Students also get daily feedback from the rest of the class. Considerable attention is given to discussing products, such as poems, by both students and teachers. Also much attention is paid to the students' personal feelings and opinions.

TEACHER INTERVIEW (Excerpts)

Q: What kinds of activities are going on in this program--what do you do with the kids?

A: For instance, when I mentioned reading and discussion, we're doing the Junior Great Books. This we do once a week and they do the reading on their own. ...We're aiming at training children to do reflective thinking. Our purpose there is to have them read something that has a lot of implications, in other words the material is rich, and then exploring some certain problems. We use a basic question which is an interpretive question and our discussion isn't just about the breeze, but to resolve the certain problem that the interpretive question indicates. I think there's many opportunities for creative thinking--what I call intuitive leaps--where students connect seemingly unrelated parts in the book. And now this is what it's designed to do, to connect these unrelated parts, and it gives the student an opportunity to be creative but at the same time the structure is demanding. You don't just sit and give your opinions; you have to back up your opinions with facts from the book.

The writing has to do with writing of poetry, writing of stories, and most of the time we're after imagination and also we're stressing fluency ...just sheer fluency. I think there has been research which indicates that if you just have kids do a lot of writing, that in itself is helpful in training the children to write. ...In our writing we're attempting to use things like brainstorming, for instance, to write a poem. We used this this morning. The kids used two things, brainstorming and also forced association.

Q: *Could you explain what they do when they do this brainstorming and forced association?*

A: This morning they took two different objects from nature and this may be the snowflake and butterfly and then they brainstormed this. This is my example that I used on the board; they took their own. So they brainstorm snowflake, for instance--some of the children's ideas were "designed art nature," or "light is now" or "cold is an ice cube." And then they did the same thing with butterfly and some of the responses there were "insects fluttering in the breeze" and "caterpillar colorful," "glittering like diamonds." Then I asked them how many of these brainstorming ideas could be descriptions of both the snowflake and the butterfly.... We're using snowflake and butterfly to force associations to get here again seemingly unrelated things and to try to get them to see the relationship between these, and then to use these ideas in writing a poem.

Q: *How would you explain the approach you are using?*

A: I think for one thing...our title indicates this by "Ideas Development Laboratory." We're interested in the kids' ideas and in them developing their own ideas. ...We're always trying to find a nice balance between structure and the lack of structure. ...The idea of coming in and saying you can do anything usually leads to chaos. And I think the other kind of thing leads to the children disliking it and saying, "Why can't I do what I want to do." So we're always trying to strike a balance between these. We try to use an approach which allows for...psychological safety.

Q: *Can you explain that?*

A: Well, number one, that ideas can be spoken about and written about and you're not necessarily responsible to use these ideas. And, number two, we're not trying to--there isn't anything the child can say that the teacher is after. The only thing you can possibly do wrong here is <u>not</u> to have any ideas. Then we try to teach the idea that to get a few good ideas you have to have a great fluency of ideas. And we try to encourage this by mainly relying upon the students or getting the students involved rather than a lot of telling in this class. We use more discussion and stimulating the students and guiding the students.

STUDENT OPINION

When students are asked to give their opinion of the class, most favorable comments are about the class activities, especially concerning writing and the use of the imagination. There are many comments that the class is "fun." The students are about evenly divided concerning the reading and discussion of the Junior Great Books. Some students enjoy the discussions and some think they are boring. Some want to stop reading those books entirely to read other books rather than those.

One student thinks that the main concern of the teacher is developing imagination and creativity. He especially likes the freedom of speech and informality of the class as opposed to previous classes. It is also significant that it is easier to write in this class and that the student can make his own choice on what to write about. He also likes the absence of grades. It is interesting that, in spite of the de-emphasis on grades, some students still think they will eventually be graded. (No formal evaluation of the program has been attempted by local people.)

OPINIONS OF OTHERS

The program seems to be popular with students since many not in the program want to get in and none in the program have ever asked to get out. Several parents in the community also support it and have long felt something like this was needed. One parent says that she will transfer her child from a parochial school only if he is put into the program. On the other hand, the mother of another child who was selected said she wasn't certain she

wanted her child in the creativity program because she didn't want him to be a campus rebel in college. After being invited to observe the class, she has decided it is all right.

STUDENT INTERVIEWS (Excerpts)

Q: What kinds of things do you do in class?

Diane: We write stories and just creative things...like say we were just having an assignment given to us--which is crisper: winter or celery? --you have to do things like that. We do Junior Great Books. We read them and he asks us questions. And if somebody objects to one of the answers, then they can just butt in and say anything about it--if they don't agree.

Paul: We write poetry, and right now I'm writing a book, an autobiography. Not everybody is doing this--we picked what we wanted to write. We're giving reports to the class. We pick a subject and we give five minute reports. And we're just having fun. We brainstorm.

Q: Are the activities different from regular classroom activities?

Paul: Yes, sure. For instance, I was in our reading class before IDL and in reading we were told to read stories and answer questions, do work sheets, and it's different in IDL. ...There's freedom of speech; you don't have to be as formal as you would usually be in the classroom. ...I think we learn a lot from all of these things that I know we wouldn't learn if we were in reading. When we write compositions, I'm more inclined to use more imagination than I do in other classes. The teacher in other classes will say, "All right, write a story or poem about fish," and you have 15 minutes to write it and you don't get much done. But in IDL you can make your own choice. ...We can think about what we're going to do and get ideas from our teacher.

Q: What are the three best things about this class?

Diane: I like the kids. I like the way we do things. Like we are going to put on some sort of show for other kids. It's going to be like Ed Sullivan. I like some of the Great Books. It depends on what kind of story you're reading though.

Jim: We have a good teacher. We do things to use our imagination. This class has to do things that I usually don't do.

Kathy: Makes me write and I enjoy that. Lets you express your ideas freely. No right and wrong answers.

Q: If you could change three things about the class, what would they be?

Paul: Well, I kind of regard IDL as a class along with other classes, and we have a few things that I really don't care for to tell the truth. We just had an assignment, write down ten problems that you have around the house and these were due last Friday. And I don't have very meny problems to tell the truth. And if I do though, I just talk about them at home. I don't really feel that this is the place. I didn't care for that. And I would make it a longer session. ...We read these Junior Great Books, and we have these discussions every week, and right now they're a little dull. And this just seems to drag on. ...That's the only time that I don't like the full hour.

Nancy: Other books instead of Great Books. More participation from other students. Different chairs.

Larry: To have more time in this class. To give more kids the opportunity for it.

CLASSROOM CLIMATE

(Based on the Class Activities Questionnaire)

	Thought Processes	Emphasis Seen By Students
SIMPLE	Memory	?
	Translation	MUCH
	Interpretation	SOME
COMPLEX	Application	?
	Analysis	SOME
	Synthesis	MUCH
	Evaluation	?

Combined student judgments of what activities are emphasized reveal major class characteristics. The thought processes called for in a classroom can range from simple to complex. The emphases seen by the students are shown in the chart.

Mr. Beckon is successful at emphasizing two of the more complex processes. Synthesis receives much emphasis, as would be expected with brainstorming and the many creative thinking activities occurring in the class. There is also emphasis on Analysis, the logical defense of opinions in class discussion. Emphasis also occurs on the process of Interpretation. Activities producing this emphasis include reading and interpreting written materials such as the Junior Great Books. All of these conform to what the teacher felt was most appropriate for the class. The students also see much emphasis on Translation. Mr. Beckon wanted to de-emphasize this ability which involves restating ideas. The degree of emphasis on the other processes is not clear.

Classroom Conditions	Emphasis Seen By Students
Discussion Opportunity	MUCH
Lecture	?
Percent of Teacher Talk	40%
Test/Grade Stress	NONE
Enthusiasm	MUCH
Humor	MUCH
Independence	MUCH
Divergence	MUCH

The positive classroom conditions of Discussion Opportunity, Enthusiasm, Humor, Independence, and Opportunity for Divergent Thinking are all strongly emphasized. All of these conform to the instructor's ideal and are directly traceable to his rationale and behavior. Also consistent with his ideal, tests and grades are not emphasized. The teacher lectures more than he thinks he does, although the amount of time he spends talking is far less than that for the average teacher. The teacher talks between 33-40% of the time, which approaches his ideal of

25% of the class time. (Few teachers in any classes we have observed manage to talk less than half the time.) Thus students have more opportunity for active involvement. They also spend several hours a week preparing for class--more time than Mr. Beckon expects or is aware of. Judging from their comments, much of this represents voluntary efforts.

Based on the teacher's responses to the Class Activities Questionnaire, there is a high correspondence between the teacher's intended emphasis and the students' perception of what actually takes place, indicating he is very successful in what he is trying to do. Also high correspondence between the class and his predictions of their view (which was the case) indicates that the teacher is also well aware of how the students are responding to the class. This is attributable to the close contact of the class and teacher. Overall, the profile is almost perfectly in line with the teacher's philosophy and rationale--a highly successful class.

INTERPRETATION OF THE CLASS

This class is an excellent demonstration that a teacher can teach simultaneously for both thinking and enthusiastic involvement. It is not too uncommon to find a class where the atmosphere is exciting. Usually such classes deal with "fun" materials but often lack attention to rigorous quality thinking. On the other hand it is rather common to find an emphasis on thinking carried out in a dull joyless atmosphere. This is that rare class where both facets are successfully attended to. That these results should be attained with children who do not respond well to accelerated classes is particularly gratifying.

Several factors contribute to this success. First, intensive personal attention is given to each student and to his work. The teacher seems to be particularly sensitive to both student work and personalities. Secondly, quality materials are used in the class, preferably materials that are subject to many interpretations. Where possible, the students are asked to draw upon their own experiences. When problems are selected, they are "real," complex adult problems worthy of consideration. Thirdly, before engaging in a "creative" act such as writing a poem, the students engage in stimulation activities to warm them to the task. Finally the onus of grades and tests has been removed. The teacher evaluates by responding directly to student ideas and products, thus indicating that these products are worth consideration in and of themselves. In addition, the students are free to pursue divergent ideas and to make many choices on their own.

Another important consideration is that the teacher talks far less of the time than the average teacher and allows the students to talk for more of the time. Yet the class emphasizes four of Bloom's cognitive levels. Obviously much teacher talk and homework is not necessary to get students to think. In addition, because the teacher truly listens, he is able to accurately estimate how well students are doing. It is important that students hold their individual opinions and respond to each other.

Besides making the class enjoyable, presumably creating good learning attitudes in students and making schooling intrinsically worthwhile, the class should also have payoff in better achievement. Both the emphasis on higher thought processes and the classroom interaction patterns have been shown to be related to higher achievement scores. The worst thing said

about the class is that the students do not like some of the Great Books and the way some discussions are handled.

Whether this kind of program could be successfully applied in another district is open to question. No doubt this teacher has exceptional skills and experience as a teacher. However, the other teacher in the program is just as successful with her classes, using the same techniques with very similar results and, in fact, the program was originated by yet another person who passed it on. Certainly the program is not entirely idiosyncratic. Another major restriction is the small class size. Although there is some flexibility in this class size, no doubt the program can only function in a relatively small group. Considerable administrative support for the program is suggested by the small class size, reduced teacher load, and the use of a test like the Torrance in the whole sixth grade. In spite of these limitations, many of the procedures and techniques should be applicable in other situations. However, it may be the reinforcing consistency of a combination of these techniques that make them so effective. Under the right circumstances the program could be duplicated in other settings.

Here then is a program in practice that captures the ideal of most teachers, for when several hundred teachers were asked what their ideal was, it closely resembled the profile of this class. The essence of the class is a different student-teacher relationship that requires a new role for both. The student is more active and the teacher is less of an information-giver. More of an "equal" relationship exists yet the teacher is obviously in control. It is, as the teacher says, a balance between too much and too little structure.

CASE STUDY #2

PARCHLAND: NO ROYAL ROAD TO LEARNING

PROGRAM: Honors program leading to college credit

SUBJECT: Math...college algebra and trigonometry

GRADE LEVELS: 9th through 12th

PROGRAM SIZE: 9 classes of 1 teacher and 20 students each, thereby involving 4% of the faculty and student body.

CLASS SIZE FOR THIS CASE STUDY: 2 Classes of twenty 11th and 12th grade students

TIME: 60 minutes daily

COMMUNITY SETTING: An upper middle class suburb west of Chicago. The members of the community generally assume that their children will attend college and they consequently pressure the local school to develop new college-bound programs.

SCHOOL SETTING: Parchland North and South High Schools (9-12). The two high schools have 4300 students and 234 teachers.

PROGRAM DESCRIPTION

This particular honors program has been in operation for more than eleven years. Beginning in the 1950's, it grew out of the regular math program and the emerging concern for gifted students at that time. After an elective algebra course was instituted at the eighth grade level in the district, an "honors" sequence was begun in the two high schools. Another important influence was that the schools participated in developmental trials of three different "new math" curricula. Eventually an advanced placement program was developed, under the direction of the assistant superintendent, in which

students could get advanced credit in college.

Students are selected on the basis of their math aptitude. After determining the number of special classes desired--18 students is considered the minimum feasible number for a class--teachers recommend students. The students' records are then examined and they are invited by letter to participate in the program.

Teachers are selected for the honors program according to their previous training in math. One requirement is that they be math majors. The principal and chairman of the department review the credentials of potential honors math teachers looking for such indicators as the college they attended. Once selected, the teachers are also expected to receive further training at NDEA institutes since the purpose of those programs is "...to upgrade the quality of math teaching in the United States." Because they provide teacher training and good instructional materials, NDEA funds are considered to be a very important influence on the program.

Mr. Harms, the first of the two teachers to be studied in this case study, is chairman of the math department at Parchland South, about 50 years old, has been in training institutes at four different colleges, and has participated in trials of more than one "new math" curricula.

ONE DAY IN CLASS

(Based on actual observation)

The students enter a square room, rather dark, with mint-green concrete-block walls. At the exact front center of the room is the teacher's desk, on which rests an overhead projector. To one side are two file cabinets and a

bulletin board displaying the school banner. There are five rows of seats with six seats in each row but only about 20 students in the class. The room seems larger than most classrooms, perhaps because it is square.

The teacher works at the front board during the whold period, lecturing almost the entire tiem. Occasionally he asks a question such as "What is the sine of a negative Beta?" and "If we take this chord right here, what are we going to have?" Students talk only when they are singled out by the teacher to make a response. At no time does anyone call the teacher by name.

As the class progresses the teacher continues to work on sine, cosine, and tangent measures of arcs in a circle. In responding to questions the students talk a little more (10% of the time) but mainly the teacher continues his explication (The cosine of $\pi/6$ is how much?") while most of the class looks at their books or around the room. Some are paying attention as the teacher discusses formulas for finding lengths of chords and other unknowns, but many do not appear to be. Finally at the end of the period he winds up his lecture and gives directions for tomorrow's assignment. For the period as a whole, he has talked 88% of the time.

TEACHER INTERVIEW WITH MR. HARMS (Excerpts)

Q: What would you say your major goal is for this particular class?

A: I'll say the major goal is to prepare them for advanced math. Most of the students will probably go ahead and take college work in math as either a science, math or engineering major.

Q: What would be an example of an activity leading to this goal?

A: For example, they usually contribute to the developments of proofs as a group. I sometimes have them put problems on the board if they have questions about certain problems, but I found that quite often the students don't explain the details as well; it's sometimes a little more time consuming to have the students do that so I do it myself, but I try to include them in any development.

Q: Of today's activities were there any that are especially appropriate for the gifted?

A: Not necessarily except that I expect them to reproduce the proof while I wouldn't expect the regular classes to prove it normally. I assign this class some problems I wouldn't assign the regular class, too.

Q: In this class what might I see on other days that would be appropriate for the gifted?

A: We move along quite a bit faster than the regular class does and we do discuss problems that are quite often not in the regular text. I give additional material that's not in the textbook. They study more on their own; I feel that the sooner they learn to read a math text intelligently, the sooner they're on their way--rather than have to depend on the teacher. I very often don't give them any help for the next day's assignment just to see if they can dig it out for themselves--try to get them to become independent.

Q: Could you give me a few more examples of what the students do that are especially appropriate for the gifted?

A: It's primarily what we do in class discussions. I don't run any special projects for them; this spring they might do something with mathematical instruments, a little field work, use of the transit and so on. It's primarily a matter of acceleration and an enrichment of mathematics. Projects are good but I feel that in math there really is no substitute for hard work; there just isn't any royal road to mathematics. I'm afraid I probably assign more problems than some teachers do, but even the good students need practice.

Q: What do you want the students to learn in this class?

A: I want them to learn to work independently. I want them to learn to read mathematics. I want them to have as good a background in mathematics as they can possibly have, that I can possibly give them.... I

want them also to be a good school citizen and to cooperate with the group, be a good citizen in general.

Q: *How would you describe a successful student in this class?*

A: A successful student would be one that studies regularly every day, pays attention in class, does well in his tests, and does his homework pretty regularly.

I have some students that ask questions and others that don't. I believe that I like to have them ask questions but some students have gotten to the place where they get it pretty much on their own and they don't have to ask questions. Others don't ask questions because they're...well they don't.

Q: *Do you grade students on the activities you described earlier in the interview?*

A: I grade them primarily on the tests, but I do consider their classwork, whether they participate in class. I check the even numbered answers on their homework quite often in class by asking them rather than telling them what the answers are, and so I can tell pretty well whether they have done the homework or not, and this is more subjective.

Q: *What does it take to get an "A"?*

A: Well, my feeling is you have to be pretty good to get an "A". You have to be an outstanding student, have to almost have an "A" on every test. It depends somewhat on how many tests we have during the quarter but unfortunately with an "A" you don't have a grade above the "A" to average with one below to bring it up and so it's a little tough.

Q: *What would you say is the least a student must do to stay in this class?*

A: I've been pretty liberal about this; I haven't insisted that they leave the class ordinarily, as long as they don't drag their heels, and don't drag the rest of the class down.

CLASSROOM CLIMATE

(Based on the Class Activities Questionnaire)

	Thought Processes	Emphasis Seen By Students
SIMPLE	Memory	?
	Translation	?
	Interpretation	?
COMPLEX	Application	?
	Analysis	MUCH
	Synthesis	?
	Evaluation	?

Although Mr. Harms indicates he wishes to emphasize all seven thought processes, he is seen by his students as emphasizing only one--Analysis. This emphasis--inquiring into the structure of material and applying the appropriate rules of reasoning--is directly attributable to the exclusive problem-solving and analysis of proofs conducted in the classroom.

Classroom Conditions	Emphasis Seen By Students
Discussion Opportunity	?
Lecture	MUCH
Percent of Teacher Talk	90%
Test/Grade Stress	SOME
Enthusiasm	NONE
Humor	NONE
Independence	?
Divergence	?

Where the class really looks bad on the questionnaire is in the classroom conditions. The teacher wishes to promote Discussion Opportunity, Independence, and Divergence in class. Yet the students are inconclusive. He wishes to de-emphasize lecturing, but instead emphasizes it strongly. In fact, students estimate that he talks 90% of the time while he thinks he talks 60% of the time--a gross misperception on his part.

The most serious symptom of dissatisfaction is the absence of enthusiasm

within this class. Although he wants some student enthusiasm, Harms predicts that his students will say there is none. Students also say there is little or no joking or laughing in this class although the teacher felt they would see some emphasis on humor. While it is not uncommon to find classes in which students are unenthusiastic, the absence of humor is a rarity in the several hundred classes studied. This is a no-nonsense, all-business course with no distraction from the goal of covering mathematics rapidly and exhaustively.

The only place on the classroom conditions chart where Mr. Harms meets his ideal is in the emphasis on tests and grades. He wishes to emphasize tests and grades and does. According to student estimates he also gives 31/2 hours of homework a week--extremely high compared to the average teacher.

Mr. Harms is successful by his own standards at emphasizing only one of the seven thought processes (Analysis) and one of the seven classroom conditions (Test/Grade Stress). He is obviously not succeeding at accomplishing his intended emphases. When asked to predict the reactions of his students, Mr. Harms continued his poor track record since most of his predictions matched his intended emphases: in short he neither achieves what he intends nor is aware of how he is coming across to students and where he is failing.

STUDENT INTERVIEW (Excerpts)

Q: What kind of things do you do in this class?

Donna: Mr. Harms will ask us if we have any questions over the problems we did, and if we do, he'll discuss them and write them on the board. He'll also give us at least one proof a day. And he kind of yells at us a little because we don't like them. But he keeps saying that

we should like them and we should do them because that's all we're going to do in college.

Q: Anything else?

Donna: There's not too many kids who participate in class, except just to ask questions. Mostly he asks us stuff like to recall something.

Q: What kinds of things are you supposed to learn in this class?

Donna: I think we're supposed to learn the generalities with proofs and just learn the technique of proving. He doesn't give us too much busy work, like some teachers do. He is concerned about us knowing proofs because he keeps saying we have to know this for college.

We have to learn how to do the proofs; we are going to have to realize that we can't skip over them. Some of us work the problems and don't have enough time to get to all of them so we'll do the rest of the problems and skip the proofs. And say we didn't get them, because we probably wouldn't get them anyway.

Q: Do you get graded in this class?

Donna: Yes, and I need to be graded so that I have some drive to get me going. It makes me feel real good when I can bring home an "A" and my Dad is real proud of me.

Q: What do you especially like about this class?

Donna: I like the teacher because he tests us like college students. It's none of this, you had better get your homework done or else; he just says get your homework done so you can understand what you're doing.

Q: If you could change something about this class, what would it be?

Donna: Maybe, go even a little faster. Right now our class is behind Mr. Olson's class and his class isn't even supposed to be an honors class. I don't know...maybe they just grasp the material faster than we do, trying to show us up. Also I would like it if he'd let us compare notes in class. We don't talk to each other in class.

Also, if we're not going to go faster, I think it would be better if you could go to the library and go ahead of the class and maybe meet once a week so you could check and see if you're doing all right.

warn them that they work hard for grades and that the class is not very enjoyable. The main thing that keeps her going herself is that, like her father, she has always been good at math. She is happy about making good grades in math and that also makes her father happy.

However, other students in the class have varying opinions. Some typical comments are:

"The teacher is extremely intelligent and can answer all questions."
"Mr. Harms is a nice person--he makes a bad high school teacher, though."
"Gives me background for college mathematics."
"Teacher is willing to explain but rarely do kids get the courage to ask questions."

In listing what they would change about the class, most students focus on how dull it is:

"Not so much lecturing."
"Discussions involving whole class rather than one student."
"More participation in classroom discussion so I don't fall asleep."
"I'd put some 'action' into it, don't know how."
"The strict, formal atmosphere."
"More joking."
"Use better, more interesting textbook."
"He yells if we're late, but he keeps us late all the time."
"The value placed on grades overshadows the value placed on learning."

INTERPRETATION - MR. HARM'S CLASS

Mr. Harm's class is the stereotypical math class that students through the years have come to dislike intensely. Of more than 100 classes examined, this one is lowest on student enthusiasm. The unremitting aim of the teacher is to ingrain the subject matter into the heads of his students so that they can "get ahead" vocationally. This future orientation of the teacher and the degree to which he impresses it on the students is a significant feature

of the class. The rationale of the future pay-off of the subject tends to mitigate against current unpleasantness.

To the teacher's credit he does manage to teach for the higher thought process of "analysis." This emphasis occurs in all math classes we have studied, however, In all probability, the students will perform well on the Advanced Placement tests he keeps reminding them about. Since this is the main goal, the class may be a success in that regard. The cost is high, however. The strict humorless classroom atmosphere and total domination of the class by the teacher results in a particularly uninspiring class. There is no joking, no questioning--only the grimest pursuit of subject matter. When he wishes to "enrich" the class he does so by showing them other ways of solving equations. His pathetic attempts at "making the students independent" consist of occasionally not giving them any help on their homework. One of his best students wishes for the opportunity for more independence in the class.

When Harms tries to start a discussion in class, he asks recall questions that leave nothing to discuss and that no one cares to answer. In addition, Harms is a very hard grader. The extreme emphasis on grades is quite strong in the entire school--quite typical of all the middle-class suburbs studied--and the teacher manifests these pressures. The severe competitive environment is very real to the students.

There is one thing that the students like about his class--he doesn't collect and check their homework--however he does check on them covertly.

Even the best student stresses the dullness of the class and claims that the only thing that keeps her going is pressure from her father to make

good grades. At best the other students are resigned. Mr. Harms relies on his ultimate rationale--that learning math is unenjoyable ("There is no royal road.") but one must do it in order to get ahead in college and eventually gain a competitive advantage in the job market. The philosophy of the community is embodied in the classroom of the teacher--learning is not intrinsically worthwhile but is unpleasantly necessary to "getting ahead." The honors classes reveal a considerable trace of elitism. Parents and students see the classes as quite a status symbol.

In summary, strong community pressure for competition and success, a subject difficult to teach enjoyably, and a teacher who has little flexibility, humor, or ability to enliven the class combine for an unhappy learning experience and a negative feeling toward the subject. As one of his students says, "Math is a lot more 'cut and dried' than most subjects. I'm sorry to say it seems mostly dried, and I don't think anything can help."

The question arises as to how this class could be improved. We would speculate that no significant change could be made short of getting rid of the teacher. The teacher embodies what one might call the Puritan ethic. Life is a serious business, the purpose of which is to "get ahead." The key is hard, unpleasant work--with little time for humor or other frivolities. Schooling too must be serious. There is no room for enjoyment. He who slacks off today will pay tomorrow.

This attitude seems too much an integral part of Mr. Harms' personality for him ever to change. It is also interesting that in this highly competitive, upwardly-mobile middle-class community, Mr. Harms' values fit quite neatly. Given this fit it may prove quite difficult to change the teacher as he would likely have a strong supporting group in the community.

THE SECOND TEACHER: MR. FOX

The other gifted class observed in this program is that of Mr. Fox, chairman of the math department at Parchland North High School. He has six years of teaching experience. Although he has considerable training in math, he has had no special training in the area of the gifted.

Both Mr. Harms and Mr. Fox teach in the same community, teach the same advanced students the same subject matter, and have the same primary goal--preparing students for math in college. As this brief study will illustrate, there the similarities end.

ONE DAY IN CLASS

Another square room but more brightly colored with yellow and brown walls. The teacher's desk is in the back right-hand side of the room. In front is a podium where the teacher spends most of his time writing formulas on the board. Not much interaction occurs among students, but considerably more than in Mr. Harms' class. Mr. Fox talks about 80% of the time but he elicits more response from the students and spends time and effort praising and responding to student ideas.

The teacher remains in complete control of the class, calling on students by name and joking with them quite a bit. He displays an obvious relish in working with the formulas he hurriedly scratches on the board. Toward the end of the period the room has become very warm and the teacher talks loudly to keep attention.

INTERVIEW WITH MR. FOX (Excerpts)

Q: *Could you give me a few examples of how the activities I observed today were similar to what usually occurs?*

A: The approach that I used today is similar; I use the discovery or the inductive approach quite heavily in the class. As a result, the students respond more from an intellectual angle. Many times in the regular classroom, you just receive an automatic response from the students; whereas in this class they have to think about their response; also I encourage independent interplay among the students because they can gain a lot from each other...by picking each other's mind.

Q: *Could you give me some examples of what these honor math students do in other class periods?*

A: Well, towards the end of the period they are usually doing their assignment and normally they work together on this. There are certain pairs in the room that have gotten together and work on the assignment. Sometimes they're sitting near each other, sometimes not. If they are not, they have freedom of movement. This is of course all on an independent basis. As far as the class is concerned it's not too rigid or too formal.

Q: *What would you say your major goals are for this class?*

A: First of all to teach them college algebra and trig. Next, to teach them, well, to teach them the understanding of the reasoning processes so they are not doing things by rote memory. To teach them to think a little bit about how to discover things on their own or how to experiment.

An example of this is where I present a particular problem and make several wrong approaches to the solution before I find one that is correct. And these students can then appreciate the fact that many times you do make the wrong moves; I want to teach them to be tolerant of mistakes because that is the way to knowledge.

Q: *Could you be more specific about what students do?*

A: Many times for homework I will give three assignments. I will give one assignment for a student who is in the honors class, but is really not of the capabilities of the average honors class. this will be the easiest assignment. Then for the middle group I will give them what I would consider the average assignment. Then for the very, very intelligent, I will suggest that they do extra problems.

I don't divide the class up into A, B, C, groups; they pretty well understand where they are. They can put themselves in the proper perspective so that they do the proper assignment.

Q: How is the worth of the students' work evaluated?

A: Through the tests. Part of their grade comes from their participation in class and the fact that they are thinking, that they are trying to do a little bit extra within the classroom, but the majority of it is based on the tests. I don't like it this way, but under our present system I see no alternative, no workable alternative.

Q: How have the students not in the program reacted?

A: Fairly well, but we do have somewhat of a problem because of our grading procedure. This is where I am a little dissatisfied because we use exactly the same grading procedure for students in and out of the honors program. Therefore, a student says, if I can get an "A" in the regular class without too much work, why should I get into the honors program? As a result we have many students that really should be in the honors math classes as far as their ability is concerned, but because of this grading problem, becuase of the importance that grades have, they are not in the program...afraid of getting a poor grade.

STUDENT INTERVIEW (Excerpts)

Q: What do you think that the teacher feels is most important?

John: That we understand everything as much as possible. If he thinks somebody doesn't understand something, he'll go over it; or if it's going to be something that just a minority doesn't understand they can always come in some other time.

We have discussions about something like current events at times because he thinks it's important for us to develop as complete individuals not just mathematical little computers. He also goes into practical application of the math so that we can use it in other courses like physics.

Q: Of all the activities that you have in the class, which do you learn the most from?

John: I would say Mr. Fox's lectures. Although you would certainly learn more from one special project as compared to one lecture, we do more

work in the lecture area; we also learn from the discussions following the lectures. Mr. Fox is a very clear teacher and he's very good.

Q: *Can you tell me more about his being good?*

John: Well, other teachers don't really seem to spend much time on explaining something; they go exactly by the book. Mr. Fox rarely goes by the book; he'll skip around because he's got one set of logic and the book uses another. It's easier to follow his logic than the book's.

Q: *Why do you think you learn so much from his lectures?*

John: He presents the materials on the board and explains it very graphically. But he never explains it too much, he certainly never insults our intelligence. As a matter of fact he will present it a little bit above us so we have to reach, which makes it a little bit more interesting...a challenge.

Q: *Pretend that I am a new student coming into this school, would you recommend that I get into this class?*

John: Definitely! For one thing you will learn more, for another thing all honors classes are sort of a status symbol and I suppose that it's rather bad that it is, but if a persons wants to compete with the upper students, it's almost necessary to be enrolled in an honors class. It's rather looked down upon to have an "A" average and no honors classes.

There is quite an emphasis on a grade average, not in honors per se, but in the school as a whole. I think more independent study would help. Of course then we wouldn't get Mr. Fox's lectures; and he is good...the best I've had in four years here.

Q: *From time to time you've been talking about this being a good class. How would you describe to me what you mean by good?*

John: Most of the people in there want to do well for one reason or another so the teacher doesn't have to work on the attention span. We are given leeway in the homework area; it's more our own responsibility so that if you didn't do all 25 problems you're not going to be marked off. It's sort of an atmosphere where everybody wants to do well, both teacher and students.

There is great agreement among all the other students with the assessments made in the above interview. As the other students see it, the best thing about the class is the teacher and the way he presents materials.

"Mr. Fox is a tremendous teacher and explains things clearly."
"The teacher explains things so they can be easily understood."
"The discussion isn't always formulas and math."
"Questions answered thoroughly."
"Opportunity for individual expression and thought."
"Emphasis is placed on theory rather than on memorizing."
"The teacher lets the student discover the new material without actually giving it to the student."

The second best thing is the classroom atmosphere which they see as being relaxed, light-hearted, and conducive to learning.

"Relaxed atmosphere--no straining to reach a deadline."
"It's fresh in that it has humor and the student can feel at home."
"The attitude of the class."
"Cheery, but intelligent, attitude of the teacher."
"Teacher who can make and take jokes."
"Teacher quits talking a few minutes before the bell so students can relax."

When asked for their suggestions about potential changes in the class, answers centered aroud these points.

"The book is not too great."
"I would prefer a better atmosphere in which to have this class, instead of the same old brick walls."
"Less students in the class--more individual teaching."
"Grading system--a 'B' in this class should be equivalent to an 'A' in a regular class."
"Drop word 'honors' from title."
"More time to do homework in class."
"More class involmement."
"Different location--gets very hot towards end of school."

There is a division among the students on the question of grades. While some think there is too much emphasis, others believe, that comparatively, the pressure is much less in Mr. Fox's class. Perhaps this quote summarizes the real problem:

"There is a great concern for grades because of being an honors class. These kids have been getting very good grades all their lives --their parents expect a good grade. Many of us--though grades don't bother us so much--our parents have to have them or our social life is cut down or cut back."

CLASSROOM CLIMATE

(Based on the Class Activities Questionnaire)

	Thought Processes	Emphasis Seen By Students Harms	Fox
SIMPLE	Memory	?	?
	Translation	?	?
	Interpretation	?	?
COMPLEX	Application	?	?
	Analysis	MUCH	MUCH
	Synthesis	?	?
	Evaluation	?	?

The students of both Mr. Harms and Mr. Fox indicate that Analysis is the one thought processes clearly emphasized. This situation is directly attributable to the exclusive problem solving and analysis of proofs conducted in both classes

Classroom Conditions	Emphasis Seen By Students Harms	Fox
Discussion Opportunity	?	SOME
Lecture	MUCH	MUCH
Percent of Teacher Talk	90%	75%
Test/Grade Stress	SOME	?
Enthusiasm	NONE	SOME
Humor	NONE	MUCH
Independence	?	SOME
Divergence	?	MUCH

However, obvious differences occur in the classroom conditions. The students definitely feel that Mr. Fox tolerates and encourages many solutions to problems and some student initiative, and that he also allows for jokes and laughter in the classroom. Even though he lectures a great deal, Fox allows

some discussion opportunity and does not high pressure the students about grades and tests.

In summary, a teacher can survive strong community pressure for competition and success along with a subject difficult to teach enjoyably, if he has flexibility, humor, and ability to enliven a class. A teacher without these qualities, given the same educational environment, manages to promote an unhappy learning experience and a generally negative feeling toward the subject matter.

CASE STUDY #3

VILLA DUNES HIGH SCHOOL: WHERE THE STUDENTS LEARN BY TEACHING

PROGRAM: Student directed, inquiry oriented gifted program emphasizing the use of small groups

SUBJECT: American Studies (history, economics, and government).

GRADE LEVEL: 11th

SIZE: 30 students

TIME: 1 hour a day (Time is also available after school hours for students.)

COMMUNITY SETTING: A conservative lower middle class town on the edge of the Illinois prairie. Community Consolidated School District with 18 elementary, 3 junior high and 1 high school.

SCHOOL SETTING: Villa Dunes High School (Grades 10-12) with a student population of 2400.

PROGRAM DESCRIPTION

The American Studies Program is the attempt of local school officials to revise their social studies curriculum. Basically, the program is concerned with developing the learning and thinking abilities of the students and not with teaching them textbook facts. Pivoting around the idea of motivating the students toward historical research, the program encourages students to analyze the facts, to form their opinions, and then be able to logically defend them with arguments of substance.

According to the program director, Mr. Duffy, the students learn these abilities in a rather unusual manner. First, they are divided into small

groups with some students designated as the learners and others as the teachers (on a rotating basis). They then pick out some booklet from the Amherst History Series that interests them. The students draw up teaching units for a week or two, they make up an examination to test their teaching and the other students' learning. In a sense the class can be considered to be an independent study program but, according to its teacher, on a group basis rather than an individual one.

Mr. Duffy, who is a full-time director of Villa Dunes' elementary, junior high, and senior high gifted programs, believes there are two reasons why the Villa Dunes district decided to incorporate this type of program into their social studies curriculum. He states that:

> Developing research skills for the students is the most important reason for starting this type of program. The world is changing so rapidly, changing every day, almost hour by hour, it's changing so that things are never the same. The child, the student, the adult of tomorrow has got to be prepared to study and know how to study and do the research. Secondly, and almost as important is the ability to discuss and to think on one's feet...you just can't learn how to do that in a typical classroom where the vast majority of the time the teacher is lecturing, and this type of teacher dominated classroom has too long been traditional in Villa Dunes.

SELECTION PROCEDURES

A committee of teachers and some administrators organized this curriculum change and set up a four criteria standard for student selection. First, the students must have an IQ of 120, a reading achievement score of two grades above grade placement, teacher recommendation and an "A" or "B" grade in social studies or history the previous year. Then the names of

the students who meet the above criteria are given to the guidance department who makes the final selection. One reason for this procedure is that the guidance people might have "other" knowledge about students who may be on the borderline on one of the criteria but who would greatly benefit by participation in the program. The recommendation of the committee was that there not be more than 25 students involved, but the director stated that "...the physical situation in the class, load size and all of this business" forced them over this self-imposed limit to where the size is now 30 students.

Mr. Dorin, the program's only teacher, was suggested by the department head of the high school and the high school principal. Mr. Dorin was chosen because he was judged to be a teacher who is open to change, willing to change, and has a free mind about doing things new and different. He was eventually placed on the committee charged with the development of the program, and since then has made all the important decisions and has accepted full responsibility for the development of this program.

This case study will, of course, center around Mr. Dorin who has been teaching for three years and is in his first year as a teacher in a gifted program. He has almost attained his Master's Degree in History and has attended several workshops which specialized in disseminating information about working with gifted children, along with summer institutes.

GOALS

Mr. Duffy says that the goals of the program are to encourage the students to act as an historian would act, to learn basic research tools,

to learn how to be a leader, and also how to be a good listener. Mr. Dorin believes the goals are to develop in the students an ability to read critically and to speak critically, to develop a verbal ability so they can say what they mean, and to develop their ability to learn.

The goals are compatable although the administrator seems more interested in obtaining skills while the teacher implies that he is more interested in the communication ability of his students after they have mastered the skills.

ONE DAY IN CLASS

(Based on actual observation)

The class takes place in an average size classroom. The teacher begins the day by asking the students to form into their groups. Two groups of five students each take their chairs to the front of the room and begin organizing final points in a debate. The rest of the students just relax and freely socialize while the teacher steps out of the room for a few minutes. Upon his return, the two groups begin debating the question, "Was the United States justified in entering into the War of 1812?" Five minutes are allowed for each side to present its view.

After the limited debate and some audience reaction, Mr. Dorin then throws out some questions to stimulate the students toward more participation, and encourages more reaction to the panel's presentation. This meets with limited success. The teacher asks the students to meet in their previously assigned groups and work on their topics for presentation. He attempts to visit each group to make sure they're on the right track.

Because of the panel debate, the students talk for 70% of the class time while 15% of the time is spent in the small group conferences or in preparation for the debate. The teacher talks only 15% of the time and only half of that is devoted to lecture. These percentages seem quite in line with the teacher and student estimate of teacher talk for the year. The teacher estimate and ideal is 10%. The students also estimate that their teacher talks only 10% of the time--a fantastically small smount of teacher talk.

TEACHER INTERVIEW (Excerpts)

Q: *What is the basis for this course?*

A: Basically, I present the students with a conflict of values and have them resolve them. The whole basis of the course is what I consider the historical method which is based on investigation of fact and, somewhere along the investigation, drawing up the hypothesis and testing it for a conclusion. Included in this process we have discussion, argumentation and critical analysis of materials, and sources.

Q: *Could you tell me how the activities I observed today were similar to what usually occurs?*

A: Up to this point in the program we've been using books in the Amherst Project Series and I've just been giving them these books and letting them draw up teaching units, and then eventually teaching it to groups of 4 or 5; that allows me to go around observing, working with the smaller groups for the whole day or observing all the groups at once. Usually, we don't have everyone's attention focused on one topic as we did today in the panel debate.

Q: *Previous to this day, you haven't been doing this?*

A: This was the first day of the new series of units on wars, and we're short on material. We don't have the materials with which to break up the unity and teaching units. So they're doing the research and presenting their results in the form of debate to the whole class. Also I don't feel that the whole class needs to do all the work of researching all the topics; they can research two and listen to the other seven topics.

Q: *Any other ways that the activities that I observed today were similar to what usually occurs?*

A: Today was similar since the class was student directed and I stayed out of it as much as possible. You also observed small groups at the end of the hour. I went around to each group to make sure they're on the right track in their topic.

Q: *What are some more examples of what students do in each one of these activities?*

A: If they want to, I usually let them set their own goals but I make them set the goals so that they can test for them. For instance, they might take a unit and build up a teaching unit on it, starting with the information, the goals, what they're going to teach, and then I have them make up examinations to test their teaching and the students learning, as any professional teacher would. And in that way I get them to learn it; I get them also to be thinking.

In some units after students have deeply investigated the unit, I've given them a few textbooks so that they can evaluate the textbook presentation of those units, and surprisingly they often have found the textbook vague and at times factually incorrect.

Q: *Any more examples of what students do to work toward this goal?*

A: No, just the general atmosphere of the class is non-teacher directed. They know that they have to set their goals. This is the most difficult problem for them. It is not reaching their goals, contrary to what a lot of people might think. It's setting their goals.

Q: *How would you describe a successful student in this class?*

A: A successful student--there are degrees of success--a person who can draw conclusions from completely unfamiliar material would be the successful student.

Q: *Of today's activities, were there any that are especially appropriate for the gifted?*

A: Of today's activities, I think they're all appropriate for the gifted. Rather than my telling them what the information is, I'd rather have them seek out the information and make their own conclusions. Often times it frustrates them when I'm getting them thinking because I don't tell them what I expect of them. My criteria is here, "Does it make them think?"

Q: *What activities might I see on other days that would be appropriate for the gifted?*

A: Usually at the beginning of the year you will see a group of anywhere from five to ten being taught by a group of two to three other students who have previously investigated topics that center around books and pamphlets used as prime resource materials in the Amherst Series. Last week we were in the library doing research on topics which we are now presenting. You might have seen a tape or two in one of the other small groups, although usually I get them out of the room into another area where they can listen to a tape that fits in with their discussion. Aside from that and debates that might occur in the small groups you might see individual reading or individual research by some students. Some students may be in the library doing research or on independent study, although really not independent study because they will have their own aim in mind. It's independent for the group; it's not independent for the individual. You might see anything that goes on in a gifted classroom aside from anything that's teacher directed or teacher dominated.

Q: *Of all these activities which you described as being appropriate for the gifted, which do you think are the most important?*

A: In history, I would say the most important would probably be small discussions.

Q: *Why?*

A: Because they force the students to take stands and back it up. You can have a discussion in a large class, but if the student wants to stay out of a discussion, he probably can by choosing to do so and get away with it. Whereas in the small group setting the students are more liable to discuss their views and to take stands since it would be impossible for a student to get by without contributing. They are forced to make statements. They are forced to see their statements criticized and can back up their statments.

Q: *Do you grade students on the activities that you described earlier in the interview?*

A: I do not grade students at all.

Q: *How is the work that the students do evaluated?*

A: The worth of the students' work is evaluated by conference, by consultation, by comments on a paper, by comments when I hand them back a paper. It is more difficult to evaluate the goals of a group if the goals are oral, but if the goals of the group are a written paper that doesn't get in, then you don't get the "A".

CLASSROOM CLIMATE: COGNITIVE EMPHASIS

(Based on the Class Activities Questionnaire)

Thought Processes	Emphasis Seen By Students
Memory	?
Translation	SOME
Interpretation	MUCH
Application	?
Analysis	MUCH
Synthesis	?
Evaluation	?

While Mr. Dorin would like to emphasize Application, Analysis, and Evaluation in his American Studies class (since he firmly believes that gifted students can adroitly manage these higher thought processes), he succeeds only in clearly emphasizing Analysis. This facts points up some doubts as to how successful Mr. Dorin in achieving his goals since his own words indicate he has particularly med at achieving the two highest levels: Systhesis and Evaluation.

He wishes to emphasize only Interpretation in the simple thought processes and is seen as doing so, but also emphasizes Translation. This actual- would seem quite appropriate for a teacher who believes so strongly in oking for the "truth" from several different sources. The students are sure about whether there is emphasis on Memory in this class, but this is rhaps due to the tests given by the "student teachers." Mr. Dorin is nsistent with his own goals of emphasizing the learning process rather than e learning of facts.

Throughout the teacher interview, Mr. Dorin declares that he hopes that rough the use of the historical method the students will be able to recog- ze relations and see the implications of the information they have

gathered. The students believe this to be the case since they do see the process of Interpretation as being emphasized. However, Mr. Dorin desires more than that; he wants the students to generate new ideas and solutions (Synthesis) and then have them develop and apply a set of standards for judging the solutions and ideas raised by themselves and their fellow students (Evaluation). Apparently the class as a whole is undecided as to whether they are to do this. This may be a natural "bug" of a first year program or it may be a problem of goal clarification on the part of the teacher. The comments of the students shed some light on this.

STUDENT COMMENTS

The students like the American Studies class because of the independence they have in their work and the freedom they have to form their own ideas- but they also have reservations about the class because of their own lack of preparation, the facilities, and what they feel is poor organization on the part of the teacher. Despite the numerical superiority of the disadvantages, it is apparent through the students' comments and the interview that the students believe that their American Studies class is still far superior to the class setting they would have been subjected to in the normal sequencing of programs at Villa Dunes High School.

The students consider their class to be a definite break from the repetition of other history classes. That is, there are few lectures and more student responsibility. History is not presented from just one standard viewpoint. Rather the students are encouraged to find new facts and disprove old beliefs. In dcint this they may study a variety of subjects at

their own speed; the depth of their study depends upon their own interests. The students enthusiastically acclaim this type of independence, of working at their own rate and on material they feel is more topical--not just a rehash of the same materials they have been learning the past ten years.

The students are able to freely discuss the results of their studies and the conclusions they have reached. They believe that the open and frank discussions which they are allowed stimulate new ideas and help them to learn how others think. Again and again the students comment favorably on the concept of allowing them to form their own ideas and on the prevailing mood of the class: that there is no right or wrong answer.

There are no formal tests or heavy stress on grades and the students are thankful for this. They believe that the relaxation of test and grade stress has allowed a more informal and beneficial atmosphere to pervade the classroom. Therefore, they tend not to look for who was right and who was wrong on a certain issue but rather they attempt to distinguish shades of gray in historical problems and to discern major points of agreement and controversy.

The students also had praise for the methodology of Mr. Dorin in allowing students to act as teachers in the small groups, thereby offering them the opportunity to lead discussions and to plan a particular course of study. Although the students did appreciate the benefits of this type of methodology, they felt it had major problems. The main one being that many students are not prepared to accept the independence and freedom inherent in this program at this late stage in their education. For ten years the students feel they have submitted to an educational system which pressures them

to learn in a rigorously formal classroom setting, from a teacher who can only lecture and test for a regurgitation of facts; and if they don't "learn" what they are supposed to, the grading system hangs as a sword over their heads commanding their allegiance to God, country, and Villa Dunes High School.

In this class they are finally free from the pressures, but some students are failing to respond. As a result, many are unhappy with their peers who don't study--thereby causing their particular small group to suffer. When the peer group pressure isn't strong enough some students seem not to bother studying or just superficially run through the necessary material. This is particularly annoying if the persons doing this are to be the "teachers" for a certain unit of study.

The students also believe that a lack of proper facilities hampers their discussion groups; that it is too difficult to have six separate groups all talking at once in an ordinary size classroom without having annoying distractions. Also there is little time available for library work. The program director has been aware of this problem but due to a lack of money support from the community it is not possible to change the class situation.

The final class problem, in the eyes of some students, boils down to the lack of organization and control on the part of the teacher. The students feel certain areas of knowledge in the field of American Studies should be studied as prerequisite to the independent work allowed to the individuals and to the groups. This was not done and there are times when a lack of communication develops among the students because many of them are just not acquainted with certain basic facts. Students comments imply that they

enjoy the freedom allowed in their discussion groups but also feel that Mr. Dorin does not exert enough authority over the groups, that his discipline is too lax. These problems seem to be symptomatic of the love-hate relationship with the freedom they now have in this class. They want to be independent and yet directed at the same time.

STUDENT INTERVIEW (Excerpts)

Q: What kinds of things do you do in this class?

Julie: What I especially like in this class is the opportunity for individual study we have. For the last six weeks anyway, we've been dividing up in different groups and going through different books. Maybe 3 or 5 will teach another group of 10 students. The teacher really isn't involved except for a resource person and really kind of pointing the way.

Q: Could you tell me any other kinds of things that you do in the class?

Rick: We're involved in studying wars that America has been in. Mr. Dorin has divided the class in 7 groups of four with two leaders, who will rotate between the groups, and we're having debates between us on whether the U.S. should have entered the war or not. And these start today, so I don't know how they're going to turn out. But it's interesting, because each side has its own choice; they can decide whether they want to say the leaders should have entered the war or should have stayed out. Until the debate starts, the other side doesn't know what is happening so they have to be prepared for anything.

Q: What kinds of things do you think you're supposed to learn in this class?

Julie: I haven't learned very many facts, but really I've gained a more in-depth understanding than I could have gotten from just a regular textbook. I think probably one of the best examples would be the unit we had on the British view of the American Revolution. It gave us a viewpoint of actual readings with these people and instead of getting a second hand report you get the actual thing. It really adds to your in-depth study when you read Edward Burke's speeches instead of reading in a textbook about what the author thinks Burke said. You get a more in-depth study about the times and what was really happening.

Q: What do you think the teacher feels is most important?

Julie: He's not real interested in facts except for what the facts can lead to; and he's not interested in memorization of facts, just the general principles and in a discussion, of course, the more facts you know, probably the more principles and the more precise conclusions you can come to.

Q: Are any of these activities different from the ones you had last year?

Walt: I took World History last year and the class wasn't grouped academically, I mean, everybody was just kind of thrown together, and you really weren't challenged very much.

Rick: In this class you can find people you can really compete with. You can also get into some in-depth discussions about some problems like the one we had on Negro struggle for equality; we had discussion day after day about Booker T. Washington and William DuBois and their differences and viewpoints.

Q: Do you have Negroes in the class?

Walt: No, there aren't any Negroes in this class.

Q: Any other kinds of differences that you can think of between this class and the ones you had last year?

Julie: There's no real pressure in this class as far as you have ot have this done, or you have to have that done. It's more a flexible situation where there's a certain degree of pressure. I mean you have to do things, but you can do as much as you want; and the final papers don't have to be six pages each. It's as much as you want to write and as much as you feel you need to write.

Rick: Sometimes kids will get lazy, and there are some kids in the class who are, and really will get by and there are some times when you're teaching and the group hasn't read the material and you get pretty discouraged. But still in the right atmosphere, I think this situation is better than any other ongoing class.

Q: Which of the activities do you learn the most from?

Julie: Teaching! Because, I find that in teaching I have an opportunity to do just a little bit extra since you're open to more resource material. It's suggested in the teacher's manual at the back of

each book. And you're open to whatever way you want to lead the discussion.

Walt: You can go into different areas and you can bring up points that you feel are relevant.

Rick: To do a good unit, and sometimes we haven't done this, you try to read the book totally through in advance, and outline it briefly as far as the main points, and to work out what you think should be the general teaching unity before you look in the back to see what the teacher's addition is. And that's really great sport to find out what the big people who wrote the book thought you should do and then compare it to what you think you should do. This gives you an opportunity to have a responsibility and to say some of your own views at the same time.

Q: If you could change three things about the class, what would they be?

Walt: The teacher. I think the organizers of the course are on the right track but they're using the wrong teacher. He's just not suited for this type of program. Many of our projects are busy work and our time could be better spent pursuing our own historic interests.

Rick: I don't really think the fault is Mr. Dorin's. He can only give the material he has on hand. Perhaps, if a concensus were taken of the subjects desired to be covered by the teachers and the students, the course would function more smoothly. As it was some of the subject matter was boring and difficult to appreciate.

Julie: The attitudes of the kids needs changing and not the teacher so much. I think it's really a privilege to be in the class; with all the opportunities and freedom, you can accomplish so much more, but you have to use it. And I think a lot of times the kids have to be reminded of this.

Walt: The problem is for a course of this type, I feel that it is mandatory to have a teacher who is a dominating force in the classroom. The teacher must be the force that motivates and stimulates the students to work and explore. This, I feel is not being done. So no one is reminding these other kids about their great opportunity and as a result the teacher lets chatter and nonsense go un supervised; this is distracting to everyone else.

Rick: I think Mr. Dorin is trying to lead the class without being pushy but maybe he hasn't led enough when you think about it.

Walt: Right, for example, lately the groups talk for about 10 minutes and the rest of the hour is used for studying and talking.

Q: Do you think this class is worthwhile?

Julie: Yes, for its shortcomings it's a vast improvement on our other classes.

Rick: Yes, the course has many possibilities and a lot just aren't being taken advantage of at the present time, it's still a great learning experience.

Walt: I think some of the problems are more apparent now because the course was much better at the beginning of the year with two days a week in the library, one day in the room as a small discussion group working with the teacher and other two days as a class.

CLASSROOM CLIMATE: AFFECTIVE EMPHASIS

(Based on the Class Activities Questionnaire)

Classroom Conditions	Emphasis Seen By Students
Discussion Opportunity	MUCH
Lecture	NONE
Percent of Teacher Talk	10%
Test/Grade Stress	NONE
Enthusiasm	?
Humor	MUCH
Independence	SOME
Divergence	MUCH

Student responses clearly show the type of climate that emphasizes Discussion Opportunity and de-emphasizes Test/Grade Stress and Lecture. Mr. Dorin intends to emphasize Enthusiasm, Independence, Divergence and Humor in his American Studies course and is eminently successful at achieving his objectives in this area. Although there is a definite split among the students about class enthusiasm, the students do agree on the independence and divergence they are allowed in the classroom and the fact that there is allowance for joking and laughter in the class.

The data shown in the table agrees quite closely with the comments elicited from the students in the class. The class is definitely student centered with little stress on tests or grades. The students are encouraged to have initiative in their work (Independence) and the teacher definitely believes there are many solutions and no exact right or wrong answer to a problem (Divergence). Perhaps, what is most interesting is that the students are undecided about their enthusiasm. This situation also corresponds with the student comments; some students are excited about their involvement in the class activities while others believe the class should take some different directions. This factor may be the most important of all since it can act as a warning flag to a teacher; he may be reaching his ideal in most areas, but if the missing component is enthusiasm, he may have some serious problems in his class, as Mr. Dorin seems to have.

Another consideration that might affect the degree of enthusiasm in the class is simply the stress involved in learning to behave independently as a student. It is much more comfortable to do what you are told and live within the narrow demands and grades of traditional classes. This frustration and irritation may color some students' view of the class--as well as produce friction in the smooth operation of the class.

INTERPRETATION OF THE CLASS

This American Studies class possesses most of the ingredients necessary to produce a successful program. The program director and the teacher communicate well; they have the same goals for the program and for its students.

The teacher has an open mind about change, is eager to receive additional training, and is sincerely enthusiastic about what he is doing in his class.

The students are also genuinely excited about the dramatic change of pace this class offers. It promises freedom to think instead of an obligation to memorize; an opportunity to exchange ideas or solutions to problems instead of blind acceptance from the authority figure in front of the classroom; the chance for individual development through independent study instead of the conformity of the daily class assignments.

All the necessary ingredients seem to be present for a completely successful program. However something went wrong between the mixing bowl and the final product since there is a noticeable amount of dissent and indecisiveness about class enthusiasm by the students. The two roadblocks in this case seem to be a complete lack of preparation of the students for this type of program and a "failure to communicate."

In ten years of formal education, the students have been lectured to, at, and about; they never had the freedom and independence that is given to them in this American Studies class. At the same time during all their other classes in this junior year of high school, the students are subjected to the traditional style of teacher lecture and student competition. It is therefore understandable that some students do not possess the maturity to appreciate their opportunity; they use their time to socialize or to prepare themselves for the more competitive classes where tests and grades are most definitely stressed. On the other hand, some students who have the maturity or personal interest in history to appreciate this oppor-

tunity, react negatively first to the disruptive students who have rejected their opportunity and responsibility to contribute to the class and secondly to the teacher who fails to exert his control either to discipline these students or to stimulate their participation.

According to many of the prophets of independent study, a period of time to "goof off" is natural when students transfer from a rigid classroom procedure to an atmosphere of independent study. However, in Mr. Dorin's class, the year is almost over and the "goof off" period is growing longer rather than shorter.

The fact that this situation still exists and is causing some dissention illustrates the second roadblock to perfection: poor communication between the students and the teacher. The students interchange ideas about whether or not the U.S. was justified in its actions in the Mexican-American War, but they don't discuss with the teacher how boring or stimulating the materials are. The students discuss alternative solutions to various social problems, but do not discuss--with their teacher--how to keep all the students involved and interested in this course.

The teacher, on the other hand, has talked with the program director about the problems which developed when space and time allotments eliminated the two classes held weekly in the library. But he apparently failed to discuss the situation with the class or at least to discuss alternatives with them. As a result, the students feel the class has never been as good since leaving the library. Also they feel the teacher is becoming more removed from them and is being too passive. They feel he is intelligent and cares about the progress of the class but is hiding his ability and leadership and has taken the role of almost a total observer.

Although the teacher intends to deliberately frustrate the students, to an extent, in order to make them think and not rely on him, the indications are that he may have gone too far and too fast for this particular group, especially when the curriculum has not been ironed out yet. The difficulties may partly lie in the selection of students. More attention might be given to identifying students who are self-reliant. The administrator's decision to increase the size of the class also appears unwise.

Mr. Dorin must be recognized as a remarkable teacher who has developed an excitingly innovative program. In many respects he is the program. It has not yet developed to the point where it could be continued by another teacher if he were to leave. His experimentation suggests a firm belief in a set of values and a willingness to take risks. It is reasonable for Mr. Dorin, in his third year of teaching and his first in this program, to be shifting around on the continuum between monarchist and anarchist, but he is using only his own judgment and not relying on the judgments of his students, who could give an accurate appraisal of his methodology and how stimulating the curriculum is or is not.

A pessimistic forecast would be, given the unpreparedness of students for this kind of class, that this program will continue to be a vast improvement over regular classes but is unlikely to improve further from its present state. An optimistic interpretation would be, given the fact that this program is only in its second year and that Mr. Dorin is a teacher open to change, the program will develop further and some of its present problems will be resolved. Since the students are enthusiastic enough

about the program to wish it would be expanded to other subject areas, it seems more likely that a little more student initiative during the second year could develop relevant communication between the teacher and the students. This communication would improve the students' attitudes and help the teacher make realistic revisions in his own methodology and curriculum.

CASE STUDY #4

BAUMBURG: A PRUSSIAN APPROACH TO INDEPENDENT STUDY

PROGRAM: Enrichment program emphasizing independent study and use of a learning center.

SUBJECT: Math

GRADE LEVEL: 4th

SIZE: One teacher and 20 students

TIME: Daily for 65 minutes

COMMUNITY SETTING: The district is northwest of Chicago in a white middle class subdivision community. Consolidated school district (K-8) with 11,500 students in 17 schools.

SCHOOL SETTING: Pershing Elementary School (K-6) with 850 students and 31 teachers.

THE HISTORY

The Baumburg district received notification that it had been selected as a sample school district in the evaluation in January 1969. The math program illustrated in this case study began in February 1969; the program was observed in April of the same year. This school district has been receiving a sizable amount of money since 1963 to develop a gifted program ($22,000 during the 1968-69 school year.) Yet the beginning of fourth grade math and reading programs in February 1969 were the first programs for kids in the district.

Although the current director of the program, Mr. Himes, believes something was going on in the program back in 1964 when they had a full time

director, he states that

> For the last four years we have not really had a director or a definite program although we have had people. Well, I guess we would say we have had directors. I mean, we have definitely had people designated as directors and they did work with various buildings trying to do this but it was not their full time job.
>
> Now this year, we felt that when we put in our application for the gifted funds that we would try to set up a more definite structured program at one building as a starter and this of course was a program built around learning centers. And since we did have reading and math consultants it was then decided we would try to work particularly in these subject areas.

PROGRAM DESCRIPTION

The math program for the selected fourth graders at Pershing School consists mainly of two activities. First, the district has purchased an advanced math book from which the students are to independently adopt units for study, and secondly the district has also purchased many different types of math learning materials, games, and puzzles that are kept in the school's learning center for use by the children in the math class.

Individualization of instruction by the teacher and independence in learning by the student are the key concepts in this program, according to Mr. Himes. The children are to make "contracts" with their teacher to do a specified amount of work in a certain time. The students then have the responsibility to work independently and achieve at least their agreed upon goals and more if they possibly can. The teacher is of course to consult with the students on an individual basis. When this is accomplished, Mr. Himes states that the students are then free to go on to other things,

such as using the math materials, games, etc.; however, that would first be worked out with the teacher.

Since Mr. Himes' main responsibility is that of assistant superintendent; he was unable to give specifics about the actual classroom procedures or the approach used by the teacher, but stated that it is "an approach that tries to, at least, build up interest in math more than anything else. Getting children excited, enthused and motivated to go out and do things on their own."

With regard to grades, Mr. Himes stated that "we don't really worry too much about the grades." He felt that teacher conferences with the child would give both parties satisfactory evaluation of progress. Since the successful student in this program, as defined by the program director, would be one who would be able to on his own, "go ahead and do as much as possible without constantly being under the direction of a teacher."

SELECTION PROCEDURES

The main reason Pershing School was selected for a gifted program was that it had four 4th grade classes and thereby gave the director a larger selection pool to choose from than the 4th grades in other schools. Altogether four selection criteria were used: intelligence test scores (with 115 cut off), achievement test scores, student progress (past grades), and teacher recommendation. The ranking by the teachers was done before they knew the scores from the achievement and IQ tests.

The selection of the teacher was not quite as rigorous. "It came along mainly with the conversations with the principal of the school as to what

teacher he felt would be flexible to begin with, who had some security in her own right." The math consultant had been in a workship situation with a Miss Moore whom he recommended for the position because of her ability to work in a variety of situations.

Teachers in the district have no in-service training related to gifted students. Their only contact with information about the gifted comes from one day appearances at demonstration centers and from listening to occasional speakers.

ONE DAY IN CLASS

(Based on actual observation)

The selected students leave their rooms at math time and meet at the learning center for class. The learning center has carrels, is carpeted, and houses all the materials that the students need for this class. All students begin the class in the learning center, but if they want a quiet place to study they can always go to Miss Moore's classroom since it is empty at this time.

Miss Moore, as the group's teacher, has already contracted with the students for the specified work they are responsible for, so there are no assignments when the students enter. While some children sit at the tables, others go to study carrels, while still others take up places on the floor and begin to take out some of the math games.

There seems to be an almost infinite variety of materials available. A "Cyclo-teacher" offers different problems a child can solve. It also provides a chance for the children to make up their own problems.

Two students are playing a game making equations. They create their own equations with little number blocks, or cubes. They are each given a certain number of cubes and have to create equations in a certain amount of time. "Pay the Cashier" is another game being played by four youngsters in the corner. One child gets a card which says to pay so much money to someone for a pizza. The child then learns to pay the exact amount or a larger amount and give the exact change back. The other students correct him if he makes a mistake.

Other activities include geoboards, pegboards, crosswork puzzle workbooks, slide rules, and an EDL (Educational Development Lab) machine which quickly flashes story problems to the children, who must immediately decide what math processes to use because the problem won't come up again. While many children are engaged in these activities, the others are doing assignments from workbooks or completing tests on their units of study. The teacher is correcting papers, talking with individual students, and occasionally joining some of the students in the games. The atmosphere in the room seems quite free and the students change activities frequently, whenever they desire.

This day is typical of those days when the class does not meet as a group. There was no indication of the proportion of time allocated between these informal class meetings in the learning center and traditional classes utilizing a lecture approach.

However, Miss Moore did report that during the previous week she and the entire class spent three consecutive days developing a completely new number system. "We decided whether this new system we invented had commuta-

tive or associative properties, whether it had identity, number or letter, whether it had linear numbers and so on."

TEACHER INTERVIEW (Excerpts)

Q: *Are the activities I observed in the class today similar to the activities that usually occur in class?*

A: Well, perhaps I should explain this now. The way I have the program set up is that the students have certain goals to meet. Within a period of three weeks I require that they do what I call units. I'll take a large unit from a section in the Holt, Rinehart, and Winston series textbook, and break it down to get three or four smaller units. Then I set them up with exercises to do, workbook exercises along with appropriate film strips. And the child does the work, corrects it himself, or a correction sheet; then, they get my signature and are therefore eligible to take the test which I correct. There were a few working on these tests today because they were completing some units.

Now the point sheet you saw there too is part of this plan because if a child does not complete the four units in a three week period, they get five points, five black points for each unit they do not complete. For example, if the child did two units instead of the accepted four, he would have ten black points against him. A total of 25 means that he's out.

Q: *Out of...?*

A: Yes, out of, on probation.

Q: *You mean out of the program?*

A: On probation, that means he has to do some pretty tough talking. Because I found that these children know that they're in this program because of their intelligence, and unless they have to work for something or have something to compete with, they'll sluff off and figure they've got it made...that they can stay in the program forever...and that shouldn't be the way it is.

Q: *Any other activities I observed today that you feel are particularly appropriate for the gifted?*

A: Well, one activity would be the use of lattice multiplication. It's a

supplementary activity from our textbook. You see even though we use an accelerated text, these children are bright enough that I can use extra material like lattice multiplication. The children go for that ...they feel it's a challenge.

Q: *Maybe you could give me a few more examples of what students have done that are especially appropriate for the gifted?*

A: All right. We use the Educational Developmental Lab machine quite often because it's an excellent method of teaching the child to do math and to do it more quickly. And he has to be accurate too because the sentences are numbered, and go so quickly that the child has to react very fast and not miss a trick. And that's real good.

Q: *Of all the activities and games that are available for these gifted children, which do you think are most important?*

A: I think most important are things like the EDL machine. Things like that that mean a child has to figure out what to do all on his own. You present a situation to a child and then he has to decide what to do with it. It's also something that children can do individually, just work by themselves.

I would say that the slide-rule is good too, because it's so different, something they've never seen or imagined before. And for this level of child I think it's real good.

Q: *Are any of these activities appropriate for other students as well as the gifted?*

A: I've used some of these things in my classroom with other students and they respond well to it because it's different and a challenge. Most children don't care for math--they're afraid of it. But by all these game-type approaches, they like it very much...and they're much more willing to learn.

Q: *What would you say your major goals are for this class?*

A: Originally, we started out with the idea in mind in that we could get these children to work independently and I started out with a certain type of plan in the class that I think was no good, I realized it was no good. I'm still fumbling my way around trying to line a good idea for structuring the class. So now our main goal has changed from the main idea of them working so independently to the idea of teaching

them to be able to use their time. Because if you give a child three weeks time and tell them they can do anything they want, well, they'll completely fall apart. But if you give a child three weeks time and say, "Here's some goals I'd like you to meet, now you budget your own time, play and work whenever you choose." This works much better. The children are not ready, by any means I don't think, to work any more independently than this, and I wouldn't even try it because I'm afraid they wouldn't know what to do at all. They're so young, only 9 or 10 years old, and this is their first experience with free time and learning to budget their own time.

Now along with the structure, I still offer them freedom because I give them the three week period of time and a goal. But now I also say, "You budget your own time, do the work now, play later, work and play, however you want to do it." And they're learning how to handle that because they can do what they feel like doing and yet they know that a certain ultimatum to meet after a certain amount of time.

Q: *Succinctly, then your main goal is...?*

A: ...to make this child a smart little budgeter of his time.

Q: *Could you be specific about what students do in order to work toward this goal?*

A: The course is set up so that they each keep their unit goal sheets in a notebook. They also keep a unit completion sheet in their notebook, one that keeps track of how many units they've done, and they also keep a daily diary sheet in their notebook to say what they do every day.

Q: *What do you want the students to learn in this class?*

A: I think more than anything I want them to learn. They're still scared little kids, because they're excited about all this, but still a little nervous, all this responsibility. That's what it looks like to them. I say, "Here's something I want you to do, and yet I'm going to give you the responsibility of planning your own time."

Q: *Do you grade students on the activities you described earlier in the interview?*

A: I can't grade them. The district has asked that we give them all "A's" but what we do do is this: the reading teacher and I have made out evaluation sheets. The child writes about two paragraphs about how he thinks he's been doing the last four or five weeks, and then down at

the bottom of the page is a space for teacher's comments. In the teacher's comments I include how the child operates, so to speak, when he is in the learning center. Both the parents and the children see this sheet. That's the kind of grading that they have.

Q: *Could you tell me a little more about how the worth of the student's work is evaluated?*

A: Well, you saw in the room that I have a point system. Now I have had some people frown on this, but I found it one of the most effective ways to work with these kids. I have a black point system and as I explained earlier, when they don't complete a unit, they get five points. Well, now this controls how they, excuse me, this shows how they work; and in a sense it does reflect how they play and act. I found this quite effective because these kids think they have it sacked until they have something to compete with.

Q: *What does it take to get an "A"?*

A: Well, like I say, we're required to give them an "A" on their report card. Now my honest feeling is that that isn't right. I feel that these kids should be graded. There's some of these children that deserve an "A" so much and others that aren't just that good, not that responsive, and not that sharp.

Q: *What would you say is the least a student must do to stay in the class?*

A: I'll give you an example. I have one child that is a dilemma to me because he's a good one at playing and building and creating but when it comes to sitting down and doing basic work once in a while, it's just like pulling teeth for him. Now Billy always turns in his work, but he gets his things done at the last minute. He's getting his requirements done and he has ability, but just hasn't learned how to budget yet. But at least he does get things done in his own way.

Q: *Have there been reactions to the class by anyone, for example parents?*

A: Oh yes. Now their main concern was, I guess, like all parents, grades. I think that may have had something to do with why this was decided on, this "A" business.

Now we had one mother call and ask why we had dropped her child from the program. Of course we had sent home sheets, official sheets, that the principal had signed and everything like that, so everybody had

seen it. But this mother wanted to know why, so we told her exactly what we had told the little boy. Because you know I talk this over with each child before we ever think of dropping him. I talk to that child and say "Now here's the way I see , how do you see it and what do you think we should do about it," and most of the time these kids say "Well, I don't belong here." And this mother, we just explained to her the same thing we told the little boy, and she said, it's best for the boy.

Q: *Have there been reactions by teachers, other students in the program, administrators, school board members?*

A: Yes. The teachers like all of the material and stuff, and I try to get it out to them as much as I can, but yor, you start doing that and you lose everything. So we've worked out a system where you have to have a library pass to use anything in the learning center except for my class. The kids in my class can use it anytime, but anyone else has to have a pass.

Administrators, they're excited about it I think. I wish they would come more though, because it seems like we originally had all their support plus all kinds of visitors and some university personnel, but then came time to work on the program and we've done it all ourselves.

Of course, the parents and students are excited. To them this is, I'm afraid right now, it's still a status thing with the students. They know who is in these programs and these kids have a certain status. On the other hand, every child is interested in it and every child wants to use these games and these things...they're fascinated with them.

Q: *Could you tell me about reactions by students not in the program?*

A: Yes. They're jealous, and I think that's a typical child reaction, jealousy is, they're honest enough that when they're jealous they let you know. Also it's been an incentive too, this great little learning center and all these places to sit and work, huddle up in a corner, lay on a carpet, and do things like that.

Q: *Have you had any special training related to working in this program?*

A: I had only one college math course; I knew math was one of my weakest areas...I say that because I always hated math. Then I took this eight week night course and the way math was presented was so much more interesting than I had ever had it presented before. In fact, it was the teacher of that class who recommended me for this class.

Q: Have you had any training relating to teaching the gifted?

A: None.

Q: Would you like to make any closing comments?

A: Only that I'm kind of wondering if it's wise to teach the child to work independently as young as we are attempting to do. They just aren't quite ready yet; they still need the structure.

STUDENT INTERVIEWS (Excerpts)

Q: What kinds of things do you do in this class?

Linda: We do games and we work math.

Q: How do you work in math?

Ken: We have a book and a workbook that we do and we have these goals.

Q: What do you mean by goals?

Linda: Well, this sheet of paper has a whole bunch of pages you're suppose to do in your workbook and textbook, and you have to do four of these in about three weeks.

Q: What kinds of things do you think you're supposed to learn in this class?

Linda: We're supposed to learn the things in our books and about angles, division, multiplication and fractions.

Q: What do you think the teacher feels is most important?

Linda: That you get your work done.

Ken: Doing the work.

Q: Does she like you to get done ahead of time, or on time, or...

Linda: On time.

Q: Does it matter how you do the work?

Ken: She explains it doesn't matter how you do the work...as long as you get it right.

Q: Are any of the things that you do in the class different from the ones that you did last year or that you do in a regular classroom?

Ken: Most of them are different.

Linda: Yes, the games we do. We didn't play games last year in class.

Q: Could you tell me about these games?

Linda: There's one game called Tough. You make a sentence out of these cubes. You have 1 through 10, and 0 on the side. And you have to make as long a sentence as you can and you put down these tubes... They have sand in them...and when they run out if nobody else had a longer one than that person did, well, that person will win.

Ken: There's Cube-ette. It's like tic-tac-toe, only you have to get 4 in a row. It has 4 layers, plastic, whole bunch of squares on it and there's three colored discs. You can play with 2 or 3 people, and then you put them on and try to get tic-tac-toe.

Q: What do you learn in playing those two games?

Linda: With Tough you learn number sentences, and Cube-ette--I don't know.

Q: Are any of the things that you do in this class different from the ones that you did last year or that you do in a regular classroom?

Ken: Last year we didn't have all these games.

Linda: We didn't have these special notebooks that you have to bind and use in class. Last year we didn't have to use that, we could just use a sheet of paper.

Q: Is the teacher any different, does she do things any differently?

Ken: We have a different set up than we had last year; now you have to finish all your work then you can do the games.

Q: This year you have to finish all your work before you do the games. Which of the things that you do in your class do you learn the most from?

Ken: The Math book.

Linda: You learn a lot from the games, too. Like the game Space Spider. You learn about angles and patterns from that...you take a thread and push it through the holes and it has numbers on it and, like, you make real pretty patterns from that.

Q: Do you feel you are successful students in this class?

Ken: Yes...I get my work done.

Linda: Yes.

Q: Do you get graded in this class?

Ken: Yes.

Linda: Yes, on our goals we have to grade those and we have tests.

Q: Could you give me an example of a goal?

Linda: A goal might be to do units 5 and 6. Miss Moore takes pages and these unit exercises, and she puts them on this goal sheet and you have to do that. And on the top its says discussion, and you have to read that half of the chapter to know what to work on.

Q: What do you mean you grade your goals?

Linda: That means we've read what we should have, worked in the workbook, and done the exercises. We grade them and if we think we know the unit we take the test, and if we get more than three wrong, then you have to take that test over again another day.

Q: Which of all the things that get graded under the goals do you think is the most important...the workbook or the tests?

Ken: The tests.

Linda: The tests.

Q: What is the least that a student must do to stay in the class?

Linda: Maybe do one unit for the whole three week period. You know if you get more than 25 points you're automatically out of the class.

Q: Oh, what do you mean 25 points?

Linda: Each unit that you don't do, you get five points for it. And if you don't do like four units you'll get twenty points. And if you don't do another one you'll have a total of 25 and you'll be out of the class.

Q: What are the three best things about the class?

Ken: Learning all about math...being able to know what you're doing and to read.

Linda: You can play the games you want. You don't have to hurry up and do your work.

Q: Is it easy to get done in the amount of time?

Linda: Pretty easy.

Q: If you could change things in the class, what would they be?

Linda: Well, you kind of get the urge to do more games than they want you to do 'cause you don't do very much work when you keep playing with those math games.

Q: Do most of the kids like this class?

Linda: Yes, a lot of kids want to go into this class.

Q: Do they? A lot of the kids in the other classes? Why do you think they want to go into it?

Linda: I think that they hear that we play games, and they probably don't understand that we just don't play games everyday, you have to work.

Q: Is there anything else you'd like to just tell me about the class?

Ken: In the other classes all you do is a lot of work and in this class when you get done with your work you have games. In this class you don't have to be told what to do. You can pick things that you want to do, and the teacher doesn't have to say like, do this now.

INTERPRETATION OF THE CLASS

This fourth grade program was originally conceived to create an environment which would infuse youngsters with a keen interest in math. The program director believes that children who dislike math are the rule rather than the exception (Note the academic history of Miss Moore). It was the hope of the administrators who developed this program that children would become excited, enthusiastic, and motivated to go out and do things on their own in the area of math. The original goals for the program included individualization of instruction and independence in learning...independence to the extent that the students would independently attempt units in math for study.

These goals may or may not have been realistic but they do represent the administrators' point of view. However, Miss Moore seems to have gone a somewhat different route. One reason for this is that the local administrators showed a distinct lack of interest and participation once the classroom work began. (The program director could not explain what a class meeting would be like, nor the specific materials used.)

As a result, Miss Moore has allowed her extremely high orientation toward achievement--"no sluffing off" in her class--to contradict the initial aims of the math program, that of getting the children "excited and motivated." Also Miss Moore's concept of the class includes an abundance of structure, i.e. the use of notebooks to record every detail and teacher direction of "goals" ("Do units 5 and 6").

However, the students in this class have many advantages over most students. They have physical freedom to move around in the learning center, to talk with each other, to play games, to even go to an empty classroom to study. Miss Moore feels that this amount of freedom is the greatest that can be allowed to these fourth grade children, and even this may be too much. She wonders "...if it's wise to teach the child to work independently as young as we are attempting to do."

The students basically corroborate their teacher's description of the program: "...supposed to learn things in our books...most important to get work done...important to get the right answer." They have also accepted the black point system as part of their way of life at Pershing School. However, it is difficult to see how students could develop this internal feeling of enthusiasm for math with the present black point system of retribution (three children have been dismissed from the program in its brief two month history). The district has gone so far as to officially eliminate competition for grades in this class, yet the teacher took it upon herself to initiate this penalty system.

In summation, it is obvious the program has not progressed along the intended lines. Although not enough information is available to judge student selection criteria, the data clearly illustrates that the wrong teacher was chosen. Miss Moore seems to be doing an excellent job in teaching the students math, but the goals of this program went far beyond that and she was not able to even approach them. Her lack of training in working with gifted students, added to her very structured approach to teaching, makes her the very antithesis of what the ideal teacher would be for this

partiular type of class. If the local administration had done any follow-up, this situation would have been obvious; but then if the administration in this district had been very interested in gifted education they would not have waited six years to develop a program. Therefore, it is impossible to judge the potential success or failure of the concept of independent study in math at fourth grade since it has not yet really started. But one can say that the students do like the games very much and that they are learning some mathematical principles, however subtly, from them. The students also have an excellent facility in the learning center and the teacher seems to be making good use of it in allowing the students freedom of motion. One question though is that there is no preparation for such a program for these students in the fifth grade. So not only will these students be subjected to the typical lecture style of all math classes next year, they will be doing so after having had a taste of the "good life," such as it is.

CASE STUDY #5

BIRCHVILLE: A PROGRAM FOR PRECOCIOUS SCIENTISTS

PROGRAM: Independent Study in a Learning Center

SUBJECT: Science

GRADE LEVELS: 2nd through 5th

SIZE: 16 students; 3 second and 3 third grade students, 5 fourth and 5 fifth grade students. (All boys)

TIME: 60 minutes a week

COMMUNITY SETTING: Industrial labor town with a population of 90,000 in Central Illinois.

SCHOOL SETTING: Eldorado Elementary School (K-5) with 600 students and 24 teachers. The Birchville School district has 21,000 students in its 28 elementary, 6 junior and 4 senior high schools.

PROGRAM DESCRIPTION

Five years ago, during a summer workshop, the elementary principals of the Birchville school district were asked the question "If you could do anything you wanted in order to do a better job in educating the gifted child what would it be?" The responses totaled into one answer: to establish a materials or resource center and then staff it.

The district's Director of Research, Mrs. Kovats, found that 95% of the highest achieving students in the district were enrolled in 12 of the 28 elementary schools. It was therefore decided to put these materials centers in these 12 schools. These centers were stocked with an extensive

collection of materials and books specifically chosen for talented children. Four professionals now circulate among the 12 centers acting as a combination teacher-librarian.

It was during a conversation between Mr. Kovats and one of the center directors, Mrs. Edgington, over a problem child in the 2nd grade that the idea for this independent study program developed. As Mrs. Kovats states: "...this student was so far out that he did not consider himself to be a member of his class." The reason for this alienation was the fact that the boy was highly gifted and had an intense interest in science. For several reasons it had become obvious that this boy could not satisfactorily remain in his class without some external stimuli to keep him motivated. And although this particular boy provided the original impetus to the establishment of this particular science class in the materials center, both Mrs. Kovats and Mrs. Edgington believed there were other boys in various grade levels at Eldorado School that would also benefit from such a class.

The research director believes that the most important objective of a class such as this, which is a gathering of the top science students from second through fifth, is "...to let the kids stimulate each other." The teacher's role is to act as a resource, to see that they have material and to set up a place where they can interact. The teacher encourages research activities and reporting the results of their research to the class. It seems that although they are all highly interested in science, they are interested in different fields. For example, one might be intrigued with physiology and another in oceanography.

The materials have to be close to high school or college level to be challenging to the science students. Mrs. Kovats maintains that this is the case since the major goal of the program is to stimulate these students to continue to grow intellectually. "This kind of youngster, if he isn't stimulated properly, very well may become anti-intellectual because of the fact that what is going on in the classroom is boring him." As a result, the research director believes that independence as a style of learning is more central to the program's goal than just the accumulation of knowledge.

SELECTION PROCEDURES

The two main criteria used for student selection into this program were their test scores on the science and math sections of the Stanford Achievement Test and teacher recommendation. For example, the research director was looking for youngsters who at the third grade had a ninth grade science score or at fifth grade had a twelfth grade score.

From the start of the program it was decided to keep the number of students down to a group small enough to be easily handled yet large enough to stimulate each other. Eventually though the final class size (16 boys) was chosen because that many students qualified under the selection procedures.

There was one other limitation however; no girls were accepted. It seems that the bright second grader, the impetus for the program has an equally precocious sister in the third grade. Both Mrs. Kovats and Mrs. Edgington decided it would be best not to have them together for

this class. Their solution was therefore to limit membership to boys.

Mrs. Kovats wished to staff these materials centers with individuals who had been extremely creative classroom teachers and who had also received training in library skills. The first screening was in terms of the extremely creative classroom teachers and as a result it has been very difficult through the years to keep people limited to this program. However, Mrs. Edgington has been with the program since it started. She has had twenty years of experience as a teacher, the last five of which were spent in this program as a materials center director.

ONE DAY IN CLASS

(Based on actual observation)

The multi-grade science class meets in an 18 x 12 room just off the Materials Center. The class began with all the boys sitting in a circle. The first activity was "What's in a Box?" One boy had an object in a box and everyone else brainstormed ideas to find out what was inside. For example, the first boy had brought a model of a heart's blood pumping system using red oil in plastic tubes. Students had to ask questions which could be answered "yes" or "no": "Could anyone use it?" "Is it wooden?", "Is it plastic?", "Does it conduct electricity?"

During this time the teacher allowed a considerable amount of freedom to the students. Students asked questions and made comments freely, interacting among themselves as well as with the holder of the box. The students also evaluated their own ideas and questions that they asked. When the questioning was over the student showed the pumping model and set up an experi-

ment to use it while the other students crowded around him on the floor.

The students then began working on their individual projects. Mrs. Edgington allowed the students to wander about the room during this time. A little later two students gave their reports to the class. The students listened and then asked questions. Mrs. Edgington asked the students to evaluate the verbal report, and also encouraged more student response by remaining quiet when the students were talking.

A new activity, the establishment of a viewing center, was introduced during this session. Mrs. Edgington believes that this center with individual viewers will provide the boys with a new source of information for their projects and reports. The viewers will be available for them at any time during the week and not just during the one hour class time.

The class seems to have an aura of intellectual pursuit, along with physical and verbal freedom for the students. The students enjoy the class and seem to enjoy the whole learning process.

TEACHER INTERVIEW (Excerpts)

Q: Were the activities I observed today similar to what usually occurs?

A: Very much so. We usually have the same format: the students do their own research and bring their findings to class. We always start class with the game "What's in a Box." The only difference today was that usually I give them books in which they are interested in order to continue their independent study projects, but today we ran out of time.

Q: Could you tell me a little more about how you handle that part?

A: The independent study? Each child is given a form to fill out at which time he decides on the subject area that he wants to pursue his infor-

mation, and he turns in the independent study contract to me the week before he starts on his project. Then I find books that will more or less challenge him in his reading and his ideas. Then he decides on the completion date for the project. He may bring up the idea behind his project before the class to obtain their opinion or he may ask me for some comments.

Q: *Could you give me a few more examples of activities?*

A: The youngsters themselves actually bring about what happens in the class each time because they are the ones who are truly the teachers of the other students; it's a kind of a cooperative type of class. There is usually a lot of noise in the classroom but this is natural because of the spirit of cooperation here. For example when one boy is talking about something and he may disagree with one of the other students; they immediately discuss what is happening and try to figure out the answer to the problem.

Q: *Then today's class is basically similar to what usually occurs?*

A: I would say this is the first day I brought in the individual viewers for filmstrips and the boys seem to be quite excited. They will be pursuing this on their own the rest of the week that I am not here. I'm assuming that they will come up and use the individual viewers and gather information from the filmstrips as they have done before in gathering information from the books that have been chosen for their use. I've had some students pursue their subjects by not only using our materials but going to the public library in order to get information too.

Q: *When did this program begin?*

A: Mrs. Kovats along with the building principal, and I met about six weeks ago with the students we had chosen on the basis of test scores, achievement records, and so on. The boys met with me and talked about whether or not they would be interested in this science class, and a letter was sent to their parents explaining our intentions. In the first class I explained what I wanted them to do and I found out what they wanted to do. We discussed independent study and what the word meant.

Q: *Could you give me a few examples of what the students do that are especially appropriate for the gifted?*

A: Independently developing and making their own projects and then coordinating all the information relevant to their project and presenting it to the entire class seems a very appropriate activity for gifted children.

Q: *What are some of the boys doing?*

A: The subjects vary from weather astronomy, to space science, electricity, anatomy, archeology, atomic science, and plastics. The independent study report on plastics was very good.

Q: *Could you tell me what this boy did?*

A: He brought to school some models of things that he had actually made, told how he made these different items, the different kinds of plastic he was using, and the differences among the various plastics. He's still doing some reading on this although I'm finding it rather difficult to get information for him.

Q: *Could you take another student and tell me exactly what that student did that would be especially appropriate for the gifted?*

A: Another boy made a written report on gerbles and did extensive research to find information about this animal. We have very little here in our materials here, so I suggested that he go to the public library and use the Readers Guide to Periodical Literature and this was a new way that he (5th grader) was able to find his information. Another boy, who is in the 3rd grade, who was doing his book on astronomy this afternoon wants to do an oral report and I find that each week he has become so free in the class that he wants to get up and talk again.

The boy that did the weather report, he talked more this afternoon than any other time I've heard him. He's a second grader and finally beginning to loosen up a little.

Q: *Of all the activities which you have described as being appropriate for the gifted which do you think are the most important?*

A: The boys are coming together in the multi-grade level class and sharing their knowledge. That's important, I think, to each boy. It's surprising how they don't want to give up any of their time from this class to go out to P.E. I think this is important, the way that they can understand each other. At first, some of the boys were wondering about having 2nd graders in with 5th graders, but everything seems to be working out quite well.

Q: *Why do you think this activity is most important, this sharing?*

A: First, I don't know if they actually know they are gifted, as such, since we don't use the word. But they do know that there are other boys who

are interested in the same type of thing and that they can get together and discuss what they know about science. I find that many times these youngsters in regular classes have no one with whom to talk, on their particular level of interest and ability. This is important, they need someone that they can relate to and who can relate to them.

Q: *Of these activities which you described as being appropriate for the gifted are any of them beneficial for students other than the gifted?*

A: Yes. These students walk around with books that look interesting; they talk to the other students about what they are doing. These other students hear words such as telegraphy, space science and so on and do a little pursuing on their own with some help from the material center to find out what Johnny or Jimmy is talking about.

Q: *What would you say your major goal is for this class?*

A: I would say that the most important goal is that these students belong to a group where they can relate to other individuals who have their interest in science. They are together in an exciting learning situation sharing their knowledge.

Q: *Would you give a specific example of what a student could do in order to work toward this goal?*

A: There is a 2nd grader who is quite gifted but who had been very, very unhappy in his regualr class. I think it was because he had absolutely no communication with the other 2nd graders. Consequently, we brought him into this science class and I think that we have seen a great growth in the boy. We have seen a happier child because of it. We have seen not only other 2nd graders in other classes with high ability relate to him, but we also see some of the 4th and 5th grade children admire the little boy for his ability to do things.

Q: *Any other examples of what students do in order to work toward this goal?*

A: The students share their ideas, really communicate with each other; there is an excitement that seems to be expressed in the class. They are not kept in a rigid, formal type of classroom; it's more of a seminar or discussion period and it's more informal than the usual class. For example, there is no special place for the boys to sit in the room. One day you'll find a 2nd grader sitting next to a 5th grader while at the very beginning all the 3rd graders seemed to sit together, etc. Now everyone is scattered and they are not aware that this had gradually occurred. I'm glad to see that it has become a composite class.

Q: What do you want the students to learn in this class?

A: They seem to know more about some of these different subjects right now than I do. So I think just the excitement of being enthusiastic and attacking things through discovery is what I want them to learn. I hope that they will be able to proceed with this type of excitement and discovery and inquiry whether it be in this class or any other class.

Q: Do you grade students on the activities you described earlier in the interview?

A: No. Sometimes I talk with the student who has turned in his report and he may evaluate his own work; occasionally the student will ask for me to evaluate it, but when I do will only give comments and not a grade.

Q: What would you say is the least a student must do to stay in the program?

A: I don't really know. If I had somebody that just caused a big disturbance in the class, I would try to find out why. And if I was unable to discuss it with him, I would ask him to evaluate himself to see whether or not he would want to continue, but I don't think this will be a problem in an independent study class. I wouldn't discontinue a student if he hadn't turned in anything because I would assume he would be working on his own. I haven't had any problems because the boys themselves are too excited about the science class.

Q: Could you tell me about the reactions of those (besides your students) to this class?

A: Other students would like to be in it but we are limited by space and time. All the parents are quite enthusiastic. For example one parent told me how her child had gove to the public library and learned to use the Reader's Guide by himself while she hadn't learned it until she was in college.

And the teachers feel that they're happy because they've seen some growth in the same children who had been previously causing some small problems in the classroom because of their boredom. Now that these students are on an independent study program, they always have something they can do to take up time. Generally, they see the class as beneficial.

STUDENT INTERVIEWS (Excerpts)

Two interviews were conducted with students from this science class. Excerpts from these interviews are restated below. Following these statements is an interview conducted with the second grade student who was the impetus for this program.

4th Grade Student: Chuck

Each week we have a different contract we have to fill out...like this week I will be doing a project on astronomy, but a couple of weeks ago, I was doing electricity.... I like this class because you can study anything you want to and not just have to study one thing.... In this class I think you're supposed to learn what a scientist does...like when someone something in a box, you're supposed to take all the facts you know about it and put them all together and then you can probably find out what it is.... I learn a lot from this science class because people are always bringing in different things like aviation, astronomy and chemistry.... In our regular 4th grade science class we have books but people know already what's in them and when teacher assigns us to read like unit 4 we're kind of bored with reading something we already know...but in this new science class you can be as advanced as you want.

5th Grade Student: Bob

We're supposed to learn how to make a hypothesis (i.e., the Box Game) and from the reports everyone makes...I think the most important part of it is what we learn from the reports...this hypothesis stuff is just an educated guess...but in the reports, like the last one, I had at least ten references about oceanography and learned almost everything there is about oceanography...it took me 8 hours to do that report on oceanography...I think it's good that you get to watch these experiments and you can do reports...the class is also good because the 3rd and 4th graders are beginning to learn how to make reports....

Extremely Gifted
2nd Grade Student: Eddie

Q: What kinds of things do you do in this class?

A: Most subjects such as archeology, electricity, telepathy. Of course you can't have subjects such as fiction, that you have to leave out, this is a science class. And we play this game; you guess what's in this one box and sometimes the guess turns out to be real odd like, is it white, is it purple, is it made out of wood, is it partly glass, all sorts of things.

Q: Why do you play that game?

A: Well if you want to find out what one thing is composed of, well you have to guess and gather all the information you could possibly get from other scientists; this is the purpose of this game, to learn how to do that. And then you ask the same questions of yourself. Like this is an example: if one scientist discovers something, and you don't know he's discovered this, and you're working on it in your laboratory, and you're not informed, you could find out later that other scientists discovered this before you even started so it's good to be informed on everything that's been invented.

You see some people think that there are not enough subjects in this world to choose from. Well, if everybody would choose the same subject you know what would happen? Everybody would have the same interest. Suppose everybody liked chemistry and mathematics and a few other subjects. Well, what would happen? All sorts of people would be the same and would never know more about themselves.

Q: What do you think you're supposed to learn in this class?

A: It's mostly learning things about others and prying information from others, and then gathering all you can--and it's really worth it, but you have to be very smart. Some children are not very smart enough to go into this science class. Of course, other children go in groups to Mrs. Edgington but they're not smart enough for the science class. You know I was once in one of them. But you know how much I learned? Hardly anything. I mostly had to show them. But in this science class I learn a little more per day than I did in the other class, but you see this is only once a week; if you miss one Tuesday, you miss a whole week. Last week I missed it. Why? My teacher just forgot, and I missed all the fun.

Q: *How old are you?*

A: Since I'm in the second grade, I'm 7 years old, and I'm an expert reader.

Q: *Do you think you're successful in this class?*

A: Well, our science class is almost fully successful but one time we were quizzed on ways to keep warm. Some of them were even jumping in the furnace, mine was a very silly one, it was shower yourself with hot chocolate; it was a whole bunch of funny jokes, and we didn't know what would happen, we were so surprised. Some of those were the silliest things you ever heard of. But you can't turn out a good answer every time.

Q: *If you could change three things in the class what would they be?*

A: First would be all the nonsense; eliminate all the nonsense. And secondly, I would try not to have children just fooling around instead of listening, not too much of that, and the third thing would be not to have anyone leave their seats and jabber and make fun out of experiments of things that didn't work. You see the first time I was in the science class I brought some chemical stuff. You know that Tom Nolan's thing didn't work and mine didn't work either.

Q: *What are three best things you like about that class?*

A: Well, one thing I like is you can learn from others about things you don't know much about, you soon become smarter and smarter. And if you don't make too much noise and listen you can get a good start out, you can soon know more about the world around you and other things. And the third thing is that if you know a little what you're talking about soon you'll know the rest and that's one reason why you learn more and that's one thing about the science class you can do that too.

Q: *Is there anything else you want to tell me about your class?*

A: I can tell you that science class is only for children that are really smart enough to go there. And of course, I'm quite smart and I have high reading levels and hardly any kid in my class can beat me, but some children just think they're so good.

Q: *Let's assume that I am just coming into this school. Would you recommend to me that I try to get into this class?*

A: Well you see, you learn a little per day. Miss Hettich is quite a nice teacher, but you can't expect everything from her. One time I asked her a question to show that I can construct things by just saying chemical terms such as HCL, hydrochloric acid, but you see you can't know everything. It would take another 100 years after you're 68 years old, probably, to learn almost everything.

Q: *How did you get into this class?*

A: First of all, I went into a normal class. That's not very high level. But then they saw I was too high and I was with other children who weren't too well educated and they couldn't pick up material. And secondly I couldn't learn much in that class, and those are a few of the reasons why. And one more reason is I just had to have a good place because you see I rather have a hunger for knowledge. That's what I just call it, and in a way that is how I got in because they found out that I didn't learn much and it wasn't very much of a pleasure. This is true, becuase you know it's kind of boring for me when I don't learn anything, because most of the other children are not as smart as me.

Q: *I see, so you want a challenge?*

A: Well, in a way it is.

INTERPRETATION OF THE CLASS

The science program at Birchville seems to be a good solution for a very real problem. It wasn't a development of the six years of participation in a statewide program for gifted students, but rather a very recently developed stop-gap measure for a scientifically oriented precocious second grade student who did not fit in a "normal" classroom.

There are no plans in Birchville for extending the program into other subject areas; there are no provisions for girls; there is no follow-up by

the classroom teachers of these science students to capitalize on any special skills or abilities they have learned. In fact, one teacher who has several students in this science class was interviewed and quickly showed her complete ignorance of the goals, methods, and activities used in the class. Also, twice during the six week history of the program, the second grade student's teacher forgot to dismiss him so that he could attend the class specifically developed for him. However, this lack of communication is not only rampant among the staff; the students themselves don't know yet if they are to be graded.

The teacher seems to be successfully playing her role as a resource person encouraging individual research and reporting. The class is definitely student and not teacher centered. The fact that she has been able to bring students together from second to fifth grade for such an academically centered subject as science is a testament to her ability to manage within an independent study environment. That Mrs. Edgington is a perfect choice for this teaching position is evidenced by her response to the question about what was the least a student could do to stay in class. She didn't even think in terms of "x" number of reports or "x" number of pages read or experiments presented. She thought only in terms of possible class disruption but then quickly dismissed it as improbable in an independent study type of class.

The science class itself does provide an excellent opportunity for these gifted students to come together and share their interests and knowledge. The freedom in the class and the enthusiasm for learning present there are in stark contrast to the boredom Eddie said he felt when he was

in his regular second grade class. The actual amount of knowledge learned is not the important factor in determining the success of this program but whether the students are free to pursue their interests in whatever area of science they choose and to what degree of specificity they wish. Given this standard, the evidence would definitely indicate that this program is meeting its objectives. There is no doubt that Mrs. Kovats and Mrs. Edgington have developed the right program for the young male scientists at the Eldorado School. Ironically, the program seems to successfully teach students about the sharing of knowledge and the spirit of cooperation yet it is administered and taught in isolation from the total school program.

STANDARDS

Evaluating the worth of a program involves making judgments of value while using a set of standards. These judgments may appear to be the arbitrary decrees of "experts" unless the standards are made known. By stating the standards and illustrating the information about programs to which the standards are applied, others have access to the judging process. It is the belief of the evaluation staff that other judges could apply these standards to the collected evidence with similar results. And these standards can be applied to rate other programs. The seven major standards used to judge the Illinois gifted programs are Student Involvement and Enthusiasm, Intellectual Atmosphere, Higher Thought Processes, Independence, Divergence, Self-Concept, and Innovativeness. These are defined in the following paragraphs.

A. Student Involvement and Enthusiasm. Considerable weight is given to how actively engaged students are in class activities and how enthusiastic they are about the class. Opportunity for all students to participate and express themselves is valued over a passive student role that requires listening and recitation. Excitement about ideas and activities counts for much whereas indifference, boredom or outright hostility reduces the effects of any positive features that are present.

Some examples of the way the Class Activities Questionnaire assesses this dimension are items asking students if "Students are excited and involved in class activities" and "Most class time is spent doing other things than listening."

B. Intellectual Atmosphere. Somewhat more intangible, but not less important, is the intellectual temper of the class, best described perhaps as interest in "playing with ideas." Ideas are enjoyed for their own sake and savored as intrinsically worthwhile. Questions are welcomed and both students and teacher respond to each other's ideas. The thinking involved is not flabby but rigorous, and entered into with a spirit of curiosity, openness, engagement, and responsibility.

The recognition of an intellectual atmosphere is based on a constellation of information about class activities. Some student comments judged to reflect this atmosphere are:

> This is my best and favorite class!!! You don't have to memorize too much stuff. Just say what's on your mind. I like that because you can analyze every viewpoint and really never be wrong. (9th grader)
>
> It's just a good class and that's how I feel. Because this class understands feelings of humans--not for color, but for what you believe. It is good for us in the future for the rest of our lives. (9th grader)
>
> My first year in the accelerated program was highly beneficial. The discussions were interesting, the attitude of the class was agreeable, and the atmosphere of the class was stimulating. (10th grader)

Other indicators of this dimension are student and teacher comments that ideas are enjoyed and are more important than grades. (See especially the "Activities" section of the River Meadow Case Study.)

C. Higher Thought Processes. An emphasis on a variety of thought processes is highly valued, especially the more complex processes represented by the Bloom categories of "application," "analysis," "synthesis," and "evaluation." The value is one of variety and

complexity of thinking rather than an emphasis on one or two of the lower thought processes of "memory," "translation," and "interpretation." This criterion differs from the preceding intellectual standard in that higher thought processes may be applied in a purely pragmatic, problem-solving way. Such a methodical approach is often seen in math and science classes.

A number of items in the Class Activities Questionnaire assess these processes, such as "Great importance is placed on logical reasoning and analysis" and "Inventing, designing, composing and creating are major activities."

D. Independence. Independence of thought and action is important. A high value is placed on the existence of a number of options for the student and many opportunities for self-initiated activities. Student options are expressed in assignments but also in the closeness of teacher control and delegation of power to the student to determine use of time, resources to be used, and assessment of performance. A contrast to this criterion would be rigidly prescribed tasks, materials, and requirements to which all must conform. Independence involves both the freedom to choose and the range of choices available.

E. Divergence. Another criterion is divergent thought--the opportunity for and tolerance of many solutions, alternatives, and points of view. This includes a respect for student ideas and a willingness to allow unpopular or off-beat ideas to be expressed without making fun of them. The freedom to express new ideas without fear

of failure or ridicule has an important effect on the overall atmosphere of the class. A one-right-answer setting in which students must conform to the accepted orthodoxy leads to second-guessing the teacher or at worst rewards hypocrisy.

F. Self-Concept. Ultimately one must also consider whether the class is going to damage the student's self-confidence and self concept. In the negative instance, are students stereotyped and regimented, manipulated by threats and sarcasm? Does the competitive environment become so intense that it is detrimental to the individual? Are standards so high that students underrate themselves and their abilities? An example is assigning "black marks" to fourth-graders and publicly displaying them in class. (See Baumburg Case Study). Another negative indicator is the degree to which the teacher dominates and controls every activity.

G. Innovativeness. Finally the Illinois Plan demands that something "different" be going on in gifted classes than in regular classes. This criterion is not easy to apply since what is different in one district will not be in another.

These standards include the values which have been strongly endorsed by the State in policies and guidelines. Training programs for teachers of the gifted have stressed many of the same ideas. When the teachers themselves are asked what activities are most important for the gifted the same values emerge. Further, teachers indicate that these values are important for all classes, not just for the gifted.

The standards listed did not all receive equal weight in the judgments of quality. They were not applied with equal force to every case study be-

cause of the varying amount of information available. The best illustrations of how these standards were applied are the interpretation sections of the case studies and the following discussion of major themes that occur in Illinois gifted programs.

THEMES OF CASE STUDIES

Growing from the application of the standards to gifted classes, is a set of generalizations across case studies which we call "themes." They are Structure, Teacher Impact, The Exceptionally Gifted, Comprehensive Programming, and Physical Environment. These themes point up areas of concern in the development and operation of gifted programs. In some cases they simply describe certain conditions to be aware of in reassessing a program's impact on students. Other themes indicate counterproductive trends which are avoidable or problems of emphasis which each district must resolve for itself.

Structure. The central organizing theme throughout all the classes observed is the "structure" of the classroom, defined as "the degree to which the student is constrained to follow someone else's organization, both intellectual and behavioral."

The structure of the class seems to be strongly influenced, perhaps determined, by the teacher. The teacher controls the amount of time students talk, the assignments, the content covered, grades, and the myriad other components that comprise classroom structure. The mental and emotional set with which each student approaches his

daily life in school is evoked in large part by the teacher. The exercising of such power is both a delicate and critical operation. When the teacher structures the classroom to the right degree, intellectual stimulation and excitement are strong--as in River Meadows, Case Study #1.

Most classes never obtain the right degree of structure. Most are so closely structured that the optimum atmosphere never develops. The most extreme case of an overstructured class is Parchland, Case Study #2. Most of the criteria described in the Standards section are not met by this class. It can only be called dull and repressive. The rationale for such classes seems to be that students must be shaped to meet society's needs--pre-specified ends which result in eventual job marketability. Congruent with such a production line mentality oriented toward an end product, the teacher uses tight classroom structure (narrow subject matter, stress on grades, teacher domination, etc.) to shape the end product. The students must acquire a set body of skills and knowledge. This is done at the expense of independence, divergence, and other criteria.

In such classes it is possible to teach for some higher thought processes but it is usually not possible to obtain an intellectual atmosphere since ideas are not cherished as having intrinsic merit in themselves but only as means towards a distant goal, usually defined as "getting ahead." Student enthusiasm and involvement in class activities, in the face of a very constraining environment, are usually very low.

All of the gifted classes examined can be sorted out on a structure continuum with Parchland representing an extreme case of rigid structure. (See Figure 5). At the opposite end of the scale is a social studies class, Villa Dunes--Case Study #3. In this class there is such a lack of structure that some students seem lost and alienated. Here again enthusiasm and involvement in class activities are low, although not as negative as in rigidly structured classes. Even after six months students do not appear to have adjusted to the demands of a role requiring a gread degree of responsibility for their own learning. Less than optimum structure does not reduce classroom quality as severely as high structure. The criteria of independence and divergence are met by this class and some intellectual stimulation occurs.

The ideal amount of structure seems to be somewhere in the region between Birchville and River Meadow. It is clear from Figure 5 that most classes for the gifted are highly structured. A different class format, independent study, utilizes the absence of structure in developing a successful elementary science program in Birchville (Case Study #5). However it is clear from Baumburg, Case Study #4, that at times when programs are initiated to increase student independence and decrease structure, many teachers have an extremely difficult time relinquishing such control. They often find covert ways of maintaining control like disguising their grading system or issuing black marks for late or missing work.

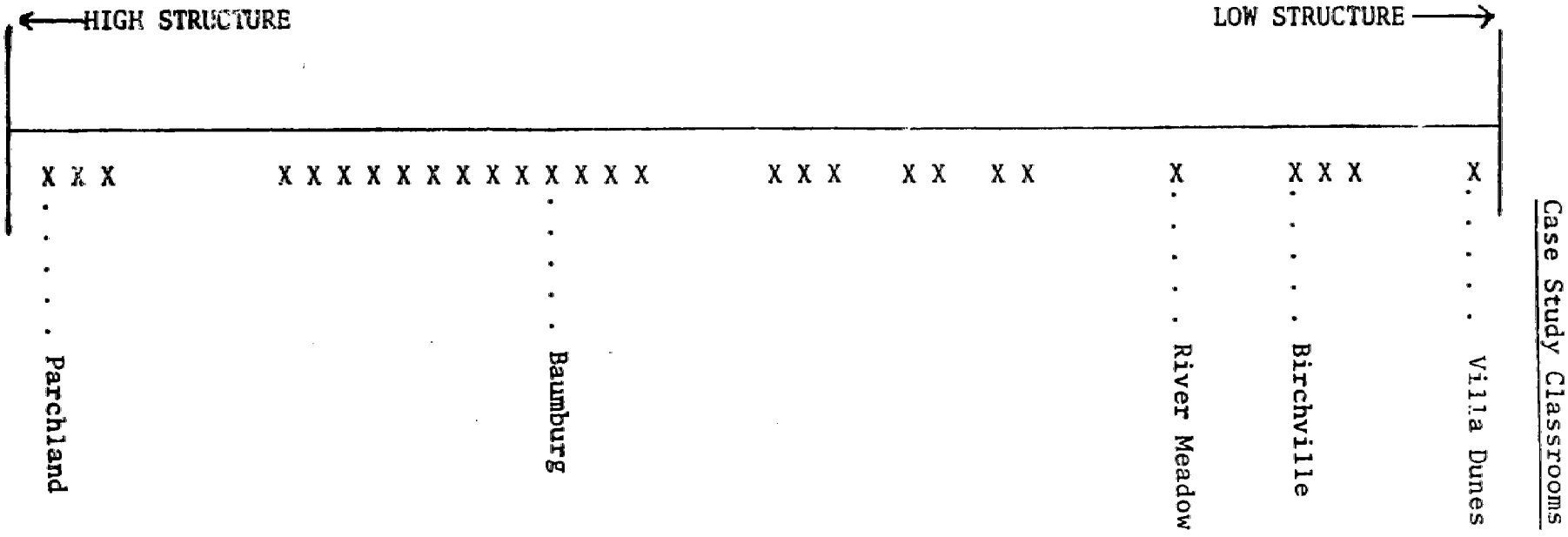
While the same philosophy of encouraging independent learning

FIGURE 5

Comparative Degree of Classroom Structure Among the 34 Districts Studied

The structure continuum reflects the degree to which the student is constrained to follow someone else's organization, both intellectual and behavorial. Criteria used in judging this degree of structure include:

--range of options available to students in assignments, subject matter, methods of study, etc.
--amount of coercive and manipulative teacher behavior, e.g. use of tests, grades, sarcasm, etc.
--degree of teacher control of student behavior and ideas considered
--necessity to "cover" a specified amount of material
--amount of student discussion and participation in class activities
--proportion of teacher and student talk during class



activities for young elementary students has influenced the development of the Baumburg and Birchville programs, the characteristics of the teachers turn these two programs into completely different entities. Each program reflects the values and attitudes of its instructor. The teacher at Baumburg has an extremely high orientation toward achievement and product output, and is very quick to dismiss students from the program whom she believes are "sluffing off." The teacher at Birchville is concerned about the student's learning experiences and intra-group relationships, and has never considered any minimum level of work that would have to be performed before a student would be dismissed from the program.

The variation in structure and the press toward overstructuring are clear. Low amounts of structure in all cases studied resulted from deliberate efforts to individualize and make students more independent and responsible for their own learning. In some cases teachers erred in understructuring while searching for the optimum. The dynamics related to high structure are less easy to understand. One feature has already been pointed to: the extreme future-orientation of many classes. In this situation the body of knowledge to be studied and the sequence of study are set. The teacher and the school know what's best for the student and no deviation is allowed. Indeed, the teacher feels that a certain "amount" must be "covered" in a specified time. In turn the students must perform. There is high pressure to produce and failure is penalized. Students compete for a high grade and only a few can win. The teacher holds great power over the fate of the students, but everyone knows the rules and everything is

clear-cut. There is no need to question or to think outside the narrow range of the course. The teacher is the final authority and is safe from any threat.

When such structure is reduced, threat increases for all. Suddenly the teacher may not be the final authority, and may indeed be challenged and subsequently feel threatened. Students may be unsure what is expected of them and judgments of success may appear more subjective and arbitrary. It is an understandable hypothesis therefore to expect teachers to avoid this uncertainty and ambiguity by becoming authoritarian. From their perspective a highly structured approach may seem both the most efficient and most logical way of presenting the subject matter. The evidence suggests that high structure is not the best climate for learning--according to these standards.

Teacher Impact. The individual characteristics of the teacher have a tremendous effect on the nature of the program. Even within the same program there can be substantial differences due to the teacher. For example, in the Parchland case study the two teachers labor under very similar circumstances. The subject, community, materials, pressures, and even didactic style of teaching are nearly the same. Yet one teacher is able to explain things better, is younger, and has a better sense of humor. For these or for undiscovered reasons--his class is much more enthusiastic. In some programs studied the impact of the teachers in the program was great enough to

warrant describing teacher A's class as one program and teacher B's class as quite a different program.

In light of the centrality of the teacher in defining the nature of the program, their selection and training is of considerable importance. That the instructional climate in gifted classes is generally much more positive than the regular classes sampled suggests that the selection of teachers is not random. Most often they seem to be selected because of an expressed interest in the program. It is likely that the better teachers in the district are selected. An earlier study suggests that teachers selected on the basis of being "willing to change" produce higher quality programs. (See Advocacy Report, #10, page 19.) The salient characteristics for selection of teachers are complex and this investigation has not uncovered them. The structure theme, however, suggests a dimension worthy of exploration as a criterion for selection.

There is great variation in the training that teachers of the gifted possess. Some are highly trained in a particular subject area (Parchland), while others have almost no background in the subject (Baumburg). Over one-third of the teachers in our sample had received no special training in working with gifted or talented students. Less than one teacher in five had received extensive training (participation in summer institute or a college course as well as local in-service training.)

Training on the education and needs of gifted children appears to vary in relation to the size of a district. Over half the teachers

of the gifted in small districts had no training while almost half of the gifted teachers in large districts had received extensive training. An earlier study indicates that lack of trained personnel is a major reason for districts leaving the program.

The case studies illustrate the impact of the teacher. The selection of teachers who are open to change and who are sensitive to the needs of talented children is extemely important. As important as selection of these teachers is the availability of specialized training which will provide them with the best techniques of working with these exceptional children.

The Exceptionally Gifted. Perhaps the most neglected of gifted children in the programs studied are the brilliant and near-genius. In most cases the gifted program provided by the school has taken bright children and grouped them together where they progress as a group at much the same rate, albeit at a faster pace than the regular classes. With a few important exceptions most programs are for high academic achievers. The gifted classes do not break the lock-step regimen, although the instructional climate of the classroom is in general much improved. For the exceptionally gifted child conditions have improved but the situation hasn't changed. It still remains largely the school's show which he must sit through and either learn to endure or become increasingly alienated by.

The Birchville case study represents the only program in which the district indicated an awareness of the unusually high ability of a student. Their program represents an attempt to provide for him.

Comprehensive Programming. Very few schools have gifted programs that provide for students across all grade levels. What schools do provide is often not coordinated with other classes. In many cases the student is suddenly thrust into a special program that places greater than usual demands on him, which are not clearly understood or built upon by his other teachers (see Villa Dunes, Case Study #3). After a year or two in the program he is unceremoniously dumped back into the regular curriculum which has not been geared up to receive him. The effect could be disconcerting and frustrating to the student. It is also irritating to staff not involved with the program who have to cope with students used to different fare and who are not in step with other students.

Not only are gifted programs not comprehensive in treating particular students over the course of their school career, they are frequently limited to one or a few subject areas. In those areas the curriculum is usually designed for only one kind of high ability--that reflected by high IQ and achievement scores and good grades and teacher relationships. Gifted students are not usually provided for who are highly creative, and/or not teacher-pleasers or attuned to fit the traditional stereotype of the "good" student.

Finally, and related to the last point, all the gifted students of a cohort (grade level) are not necessarily provided for by the school. Participants and programs are often selected with an eye toward convenience of the district. Financial and physical restrictions such as the number of students that can be in a class or

the small number of classes deemed possible limit the actual group served. Often a district finds it easier or advantageous to install gifted programs in certain school buildings but not in others. Or each school attempts to develop its own program with no coordination or follow-up at the district level.

Physical Environment. Things as elemental as high temperature and drab rooms exact their toll in program quality. Besides the dreary and sterile buildings, observers note time and again how hot and stuffy classrooms were. It would seem that a major way of increasing productivity and enthusiasm in gifted classes would be to install a decent heating system. And a giant step towards a stimulating intellectual atmosphere may be a room full of stimulating objects--or the act of leaving the regular classroom to seek a more stimulating environment. (See River Meadow and Birchville case studies.)

V. SUMMARY OF PREVIOUS FINDINGS

While the themes discussed in the preceding chapter (and the case studies used to illustrate them) represent the evaluation staff's most comprehensive judgments about reimbursement programs, a number of specific aspects of the reimbursement phase of the Illinois Plan have been examined previously. In this chapter these findings are discussed along with two additional aspects not previously reported: an analysis of classroom verbal interaction and an assessment of in-service training programs.

PROCEDURES FOR PROGRAM RATING

Eliminating Non-Programs

The initial effort in the evaluation of reimbursement programs was to gather data which verified what was actually occurring in the schools as well as furnish some assessment of quality. The first step in screening this data involved separating programs from non-programs. In contrast to the nominal participation in the Illinois Plan (accomplished by submitting proposals and receiving State funds), to be judged as having a gifted program a district was expected to have classes for gifted students in operation. (Remember that districts examined had participated for two or more years). Further, a district had to be doing something that was demonstratably beyond what they were doing in their regular programs. Based on the representative sample, it was determined that about 75% of the districts receiving funds had operational gifted programs.

Rating Program Quality

A panel of judges rated the quality of each program. Ratings of quality were based on a five category scale. (The standards of evaluation described in the preceding chapter entered into these judgments of quality. Also the values embedded in the Class Activities Questionnaire--described later in this chapter--heavily influenced the ratings.)

A = High Quality: A highly developed and well executed program utilizing good ideas which are appropriate for the gifted. The program has readily identifiable goals, utilizes appropriate activities, and shows evidence of positive results.

B = Medium Quality: An operational and fairly adequately executed program utilizing good ideas which are appropriate for the gifted.

C = Limited Quality: An underdeveloped, poorly executed program utilizing traditional approaches marginally appropriate for the gifted. The program has classes in operation, but goals and activities are not clearly defined or traditional and limited. Important considerations for gifted students have been overlooked.

D = Low Quality: A developmental program with no classes of students meeting at least one hour per week; a training program for teachers may be in operation but goals and activities for gifted students are

either not appropriate or underdeveloped.

F = No Program: District has been funded more than one year but has no classes in operation, no students identified and no coordinated training program for teachers or students.

Among programs of "A" and "B" quality are included activities in language arts, social studies, mathematics, science, independent study, individualized instruction, learning centers and music. However, math programs generally are judged to be of lower quality and have fewer positive features of instructional climate.

What can these ratings of one-tenth of the reimbursement districts tell us about the state as a whole? Direct projections cannot be made without taking certain sampling factors into account. Half of the districts receiving reimbursement funds are small and enroll only 12% of the students served. A totally random sample would not have included enough of the larger districts which receive the most money and enroll most of the students. Since some districts serve only high school or elementary students, it was important to take these differences into account as well. The sample was therefore stratified in the following manner. First, reimbursement districts were divided by size into the three groups, small, medium, and large. Then, based on the proportion of unit, elementary, and high school districts of each size, a random sample was drawn.

Thus, a summary such as that shown in Figure 6 must be interpreted with caution. The column on the right shows the estimated percentage of all participating districts with programs of each quality. These percentages have been adjusted to take into account the different number of small, medium, and large districts.

FIGURE 6

Projected Estimates of Program Quality
in All Reimbursement Districts

Program Quality		Unweighted percentages in 34 districts sampled	Weighted percentages* projected to all programs in the state
(High Quality)	A	18%	11%
	B	26%	23%
	C	24%	26%
	D	15%	13%
(No program)	F	18%	27%

*Weights were based on the proportion of programs of each quality in the sample for each size district times the proportion of districts of that size in the total population.

Disregarding for the moment the nature of the district, this projection indicates that about one program in ten is of very high quality and about one in three districts are successful in developing programs of high or medium quality. On the other hand, about one-fourth of the participating districts have been unable to get a gifted program into operation. But this figure hides more than it reveals, because the size of the district and the number of students affected is concealed. This information is revealed in Figure 7.

Now it can be seen that seven out of ten large districts have programs of "A" or "B" quality compared to only one out of ten small districts. All of the districts judged to have no program are small districts!

FIGURE 7

Percentage of Quality Programs
in Districts of Each Size

Quality of Program	Size of District			% of students attending districts with programs of each quality
	Small	Medium	Large	
A	0	15%	40%	26%
B	9%	39%	30%	30%
C	27%	31%	10%	20%
D	9%	15%	20%	17%
F	55%	0	0	7%

Another factor of importance shown in Figure 7 is the percentage of students attending schools which develop programs of each quality. Schools unable to develop programs (small districts) serve only 7% of the students attending reimbursement districts. Districts with medium or high quality programs enroll 56% of the students and hence 56% of the gifted students. These schools by no means provide for all their gifted students. However, the fact remains that at some point in their school career half of the gifted students in state-supported districts potentially could be exposed to a quality gifted program. If these districts which have evidenced ability in developing quality programs were to make them comprehensive, this potential would become a reality.

To add another perspective, Figure 8 shows how the ratings of quality for the 34 programs are distributed among the nine combinations of size

FIGURE 8

Quality of Reimbursement Gifted Programs

(Based on a stratified random sample of 10% of school districts participating more than one year.)

SIZE OF DISTRICT	ADMINISTRATIVE UNIT		
	Unit (K-12)	Elementary (K-8)	High School (9-12)
SMALL 49% of all districts are small--less than 1375 students; they enroll 12% of all students; Average funding: $1450.	**B** C F F F F D-	**C** D F D	**C** F D
MEDIUM 37% of all districts are medium--from 1376-4939 students; they enroll 38% of all students; Average funding: $5467.	A B B C B	A (River Meadow) B B C C D D C+	B C (Parchland) B-
LARGE 14% of all districts are large--more than 4939 students; they enroll 50% of all students; Average funding: $22,403	A (Villa Dunes) A (Birchville) A A B A	B C (Baumburg) D D C-	B B

Each small letter on the left in each cell indicates the rating of an individual school district in the sample drawn for each category. The large letter in each cell indicates the average level of quality attained by that group. Case studies used to illustrate programs are indicated

KEY TO FIGURE: A = High Quality
B = Medium Quality
C = Limited Quality
D = Low Quality
F = No Program

And structure in the stratified random sample. Four findings that can be generalized to all reimbursement districts are apparent:

1. Small districts (which are funded at a low level) have not produced quality programs.
2. Both medium and large districts have produced quality programs.
3. Unit districts produce higher quality programs than elementary or high school districts.
4. The quality of the program improves with increasing size for unit districts.

It is clearly quite difficult for a district with less than 1375 students to mount any kind of successful gifted program. Generally, the larger the district the better the program, but the pronounced increase in quality is between small and medium-sized districts. The medium districts receive an average of $5400.00 per year in state reimbursement funds which would appear to be another needed ingredient in developing a quality program.

THE CLASS ACTIVITIES QUESTIONNAIRE

Instructional Climate as a Measure of Quality

The evaluators relied on many sources of information for the overall assessment of "quality of program." However, one instrument--the Class Activities Questionnaire--provided a wealth of data on the instructional climate of individual classrooms. This instrument (see Figure 9) was specially constructed to reveal, through the eyes of students, the intel-

FIGURE 9

Structure of the Class Activities Questionnaire (CAQ)

Dimensions	Factors	Brief Descriptions (Items not shown)
LOWER THOUGHT PROCESSES	1. Memory:	Activities calling for recall or recognition of information presented.
	2. Translation:	Activities calling for paraphrasing of expressing information in a different symbolic form.
	3. Interpretation:	Activities calling for recognition of relationships and seeing implications of information.
HIGHER THOUGHT PROCESSES	4. Application:	Activities calling for selection of appropriate methods and performance of operations required by problem situations.
	5. Analysis:	Activities calling for recognition of the structure of material, including the conditions that affect the way it fits together.
	6. Synthesis:	Activities calling for the generation of new ideas and solutions.
	7. Evaluation:	Activities calling for development and application of a set of standards for judging worth.
CLASSROOM FOCUS	8. Discussion:	Student opportunity for and involvement in class discussion.
	9. Test/Grade Stress:	High pressure to produce teacher-selected answers for a grade.
	10. Lecture:	Teacher role is information-giver with a passive listening role for students.
CLASSROOM CLIMATE	11. Enthusiasm:	Student excitement and involvement in class activities.
	12. Independence:	Tolerance for and encouragement of student initiative.
	13. Divergence:	Tolerance for and encouragement of many solutions to problems.
	14. Humor:	Allowance for joking and laughter in the classroom.
	15. Teacher Talk:	Proportion of time consumed by teacher talk.
	16. Homework:	Weekly amount of outside preparation for class.

lectual and social-emotional quality of life in day-to-day activities. It asks students to agree or disagree with statements describing class activities, e.g. "Students are encouraged to independently explore and begin new activities." Some items are paired with other items to comprise factors; sixteen factors yield a revealing profile of a class (see Instructional Climate Report, #9).

Comparison of Gifted and Average Classes

The results reported here are based on the districts in the random sample which had gifted programs for grades six or above: 28 classes in 18 of the 34 districts sampled. Therefore generalizations based on these findings do not apply to programs in grades K-5. The reimbursement sample of gifted classes gave significantly greater emphasis to Higher Thought Processes, Classroom Focus and Classroom Climate than a comparison group of 69 average classes. (The Average sample, while not representative of all non-gifted classes was selected with care to include no below average classes and to be comparable socio-economically to the gifted classes.)

Figure 10 shows the percentage of classes in the gifted and average samples that emphasize each of the factors assessed by the Class Activities Questionnaire. From this table and information published in the earlier report referred to, characteristics of the two groups can be summarized as follows:

FIGURE 10

Patterns of Instructional Climate
In Samples of Average and Gifted Illinois Classes

CAQ Dimensions		Factors	% of Classes in Each Group Emphasizing Each Level Average Classes (N = 69)	 Gifted Classes (N = 28)
LOWER THOUGHT PROCESSES	1.	Memory*	13%	4%
	2.	Translation	39%	57%
	3.	Interpretation	30%	64%
HIGHER THOUGHT PROCESSES	4.	Application	15%	43%
	5.	Analysis	58%	90%
	6.	Synthesis	10%	43%
	7.	Evaluation	13%	25%
CLASSROOM FOCUS	8.	Discussion	43%	89%
	9.	Test/Grade Stress (Absence of)	25% (--)	20% (22%)
	10.	Lecture	30%	38%
CLASSROOM CLIMATE	11.	Enthusiasm (Lack of)	12% (51%)	64% (10%)
	12.	Independence	28%	71%
	13.	Divergence**	69%	97%
	14.	Humor	78%	92%
	15.	Low Teacher Talk (10-40%) (High Talk: 75-90%)	10% (55%)	20% (43%)
	16.	Preparation for Class Less than one hour 1-2 hours More than 2 hours	 10% 67% 23%	 -- 44% 57%

*Emphasis on Memory tends to be Underestimated and is not adequately assessed by the CAQ.

**Emphasis on Divergence tends to be overestimated and is not adequately assessed by the CAQ.

	AVERAGE	GIFTED
1.	Most classes emphasize few (2 or less) thought processes.	Most classes emphasize many (3 or more) thought processes.
2.	Most classes emphasize only one (if any) of the higher thought processes.	Most classes emphasize two or more of the higher thought processes.
3.	As a group, Average classes emphasize 3 of the 7 levels of thinking: Translation, Interpretation, Analysis.	As a group, Gifted classes emphasize 6 of the 7 levels of thinking.
4.	The teacher talks almost all the time in over half the classes; few teachers talk less than half the time.	The teacher talks almost all the time in two classes out of every five; in one class in five, however the teacher talks less than half the time.
5.	Students in two out of every five classes have the opportunity for and participate in discussion.	Students in almost all classes have the opportunity for and participate in discussion.
6.	Students in one-fourth of the classes feel a heavy stress on tests and grades.	Students in one-fifth of the classes feel a heavy stress on tests and grades, yet in another fifth of the classes students say there is no pressure of this kind.
7.	There is an absence of enthusiasm in over half of the classes.	The presence of enthusiasm characterizes two-thirds of the classes.
8.	There is opportunity for independence in one class out of four.	There is opportunity for independence in almost three out of every four classes.
9.	Students in most classes spend between one and two hours per week preparing for class.	Students in most classes spend more than two hours per week preparing for class.

The pattern of emphasis on thinking operations, especially higher thought processes, is a clearly appropriate one for the gifted classes. Just as important the gifted classes substantially support positive classroom conditions such as enthusiasm, independence, and active participation

in discussion and other class activities. In contrast, conditions in non-gifted classes are often characterized by a passive, listening role for students. Teachers of gifted classes though still have a tendency to lecture and to talk much of the time and pressure on grades still occurs in some gifted classes.

ANALYSIS OF VERBAL INTERACTION

Use of the Flanders

The Flanders system has been extensively used in the Illinois Gifted Program to analyze the verbal behavior of teachers and students. Since 1964 training institutes and workshops have encouraged the use of this tool. Thus it seemed highly appropriate to make use of this system in the observation of classrooms for this evaluation.

Briefly, the Flanders system for classifying verbal interaction sorts teacher and student talk into the following ten categories:

TEACHER TALK

1. Accepts feeling tone of student in non-threatening manner
2. Praises or encourages student action or behavior
3. Accepts or uses ideas of student
4. Ask questions with intent that a student answer
5. Lectures, giving facts or opions about content or procedure
6. Gives directions or orders to which student is expected to comply
7. Criticizes students or justifies his own authority
8. Student talk in response to the teacher
9. Student talk which they initiate
10. Silence or confusion (including periods of individual work where group interaction is not occurring).

It is possible to determine a reasonably accurate extimate of the percentage of each kind of verbal behavior that occurs during a class period The total amount of teacher and student talk is also obtained.

Procedures for obtaining the data were as follows. A trained observer classified the verbal interaction every three seconds for five minute sequences near the beginning, middle, and end of a single class period for each class in the sample. The three sequences were then combined for analysis. This time sampling procedure takes into account changes in behavior throughout a class period. The assumptions have been made that the estimate of verbal behavior obtained is representative of the entire session and that the session observed is typical of the program. Both assumptions have some support in the literature. The data are limited and represent estimates only. Percentages reported in the following Figures should be read as relative proportions of talk per category; they do not imply great accuracy of measurement. Flanders observations were obtained for 40 classes in 24 of the 34 districts sampled. (Of the 10 districts not included, 6 had no program and in 4 districts class activities prevented use of the Flanders system.)

Data Analysis

Four kinds of information follow: 1) the Flanders analysis of two highly different classes (presented to illustrate extremes of verbal behavior), 2) a summary of gifted classes grouped by subject area, 3) a summary of gifted classes grouped by grade level, and 4) an analysis of classroom questions.

Although there is no "best" pattern of verbal behavior and no set of norms have been accepted of what range of emphasis per Flanders category in-

dicates effective or ineffective teaching, it is instructive to note the difference in verbal interaction between the two programs that represent extremes of quality, appropriateness for the gifted and degree of structure imposed on the student. These two programs (chosen from the case studies) stand at opposite poles from each other. Case #1, River Meadow, represents to the evaluators the best of what is occurring in Illinois Gifted Programs. Case #2, Parchland, represents gifted programs at their worst: boring, restrictive, unpleasant learning experiences.

Figure 11 shows the Flanders sample of verbal interaction in these two extreme examples. As one might expect, the verbal behavior itself represents extremes. In River Meadow the teacher, Mr. Beckon, talks one third of the time, the twelve students almost half the period. In Parchland, the teacher, Mr. Harms, talks nine tenths of the time, the twenty students one twentieth of the time (less than three minutes of the period). Mr. Beckon questions and praises more than Mr. Harms. The greatest difference is in the degree to which students are allowed (or encouraged) to initiate ideas.

Of course the grade level and subject influence the verbal behavior. River Meadow is a sixth grade language arts class for creative students; Parchland is an eleventh and twelfth grade college algebra class for high achievers. However as Figure 12 shows, math and language arts classes have similar proportions of verbal behavior. Further when one compares River Meadow to all language arts classes, one finds that Mr. Beckon praises and accepts feelings more, lectures much less; his students initiate many more ideas. Comparing Parchland to other math classes, one sees that Mr. Harms extends less praise and acceptance of feelings, questions less, and lectures

FIGURE 11

Verbal Interaction in Two Classes Representing One Program of High Quality (River Meadow) and One Judged Detrimental for Gifted Students (Parchland)

Flanders Categories	% of Talk in Each Category	
	River Meadow (Exemplary Program)	Parchland (Horrible Example)
1. Accepts Feelings	.3%	0
2. Praises or Encourages	4%	1%
3. Accepts Ideas	5%	3%
4. Questions	9%	4%
5. Lectures	11%	77%
6. Gives Directions	4%	3%
7. Criticizes	0	.3%
8. Student Response to Teacher	11%	4%
9. Student Initiated Ideas	33%	1%
10. Silence or Confusion	23%	7%
Total Teacher Talk	33%	88%
Total Student Talk	44%	5%

FIGURE 12

Analysis of Verbal Interaction by Subject

	Flanders Categories	% of Talk in Each Category by Subject			
		Math (N=7)	Language Arts (N=17)	Social Studies (N-7)	Junior Great Books (N=6)
TEACHER TALK	1. Accepts Feelings	.1%	.1%	0	.1%
	2. Praises or Encourages	2%	2%	.3%	.5%
	3. Accepts Ideas	4%	5%	4%	4%
	4. Questions	7%	10%	8%	14%
	5. Lectures	54%	33%	22%	6%
	6. Gives Directions	4%	6%	3%	1%
	7. Criticizes	1%	2%	.5%	1%
	8. Student Response to Teacher	6%	15%	18%	35%
	9. Student Initiated Ideas	7%	13%	33%	30%
	10. Silence or Confusion	15%	15%	12%	9%
		Math	LA	SS	Jr. GB
	Total Teacher Talk	71%	57%	37%	27%
	Total Student Talk	13%	28%	51%	65%

much more; his students speak considerably less of the time, even though student talk in all math classes is low.

Figure 12 shows Flanders category analysis by subject area. Only four subject areas are shown as too few classes were available to be representative of other subjects. The four are arranged from left to right in order of decreasing teacher talk and an increased amount of student talk. Note that in Social Studies and Junior Great Books classes students talk more of the time than teachers. In fact, the proportions are almost exactly reversed from those in Mathematics and Language Arts. Another difference between the two groups is the very small amounts of Praise and Criticism in Social Studies and Junior Great Books classes. The greater amount of silence in Math and Language Arts classes may reflect the seat work which is characteristic of these subjects. Discussion leaders in Junior Great Books sessions ask twice as many questions as teachers in other classes and there is also at least twice as much student talk in response to the teacher. There can be considerable difference in the nature of questions asked. Note that both Math and Social Studies teachers spend the same amount of time asking questions yet there are extremely different patterns of student behavior.

Figure 13 shows an analysis of selected Flanders categories for classes grouped by grade level. Looking first at the totals, note that there is a greater proportion of student talk than teacher talk in the elementary grades (K-6). In the higher grades (7-12) teachers talk almost twice as much of the time as students, with a steady decrease of student talk in the higher grades. The amount of Lecture (category 5) increases geometrically from about one tenth of class time to almost one half of the period by grades

FIGURE 13

Grade Level Analysis of Verbal Interaction

	Flanders Categories	% of Talk in Each Category by Grade Level					
		K-2 (N=2)	3-4 (N=5)	5-6 (N=8)	7-8 (N=11)	9-10 (N=4)	11-12 (N=10)
TEACHER TALK	1. Accepts Feelings	.3%	0%	.1%	.1%	0%	0%
	2. Praises or Encourages	3%	2%	2%	1%	2%	2%
	3. Accepts Ideas	3%	5%	4%	4%	7%	4%
	4. Questions	12%	15%	9%	9%	9%	7%
	5. Lectures	9%	12%	17%	34%	34%	47%
	6. Gives Directions	9%	3%	4%	5%	3%	3%
	7. Criticizes	3%	2%	1%	2%	.2%	.3%
	8. Student Response to Teacher	20%	27%	18%	17%	17%	8%
	9. Student Initiated Ideas	20%	18%	30%	17%	15%	17%
	10. Silence or Confusion	20%	17%	15%	12%	13%	12%
	Total Teacher Talk	39%	39%	37%	55%	55%	64%
	Total Student Talk	41%	44%	48%	33%	32%	25%

Key

LA=Language Arts
SS=Social Studies
GB=Jr. Great Books
M=Math
H=Humanities
P=Physics

Distribution of Subject Areas by Grade Level

K-2	3-4	5-6	7-8	9-10	11-12
LA(2)	LA(1) GB(3) M(1)	LA(3) GB(1) M(1) SS(3)	LA(5) GB(2) M(1) SS(3)	LA(4)	LA(2) M(4) SS(1) H(2) P(1)

11-12. One other difference might be pointed out: there appears to be much less verbal criticism used at the high school level.

Classroom Questions

Several additional kinds of information were sought in collecting data on student and teacher talk in the classroom. Observers attempted to write down all teacher and student questions. As this involved hundreds of questions and the observers' time in the classroom was divided among several tasks, not all were recorded. Other factors, such as teachers working with individuals and audibility of students also interfered. However, a reasonably representative sample of all questions asked was obtained.

During the Flanders sampling observers attempted to classify all teacher questions into four categories according to the thinking process implied: cognitive-memory, convergent, divergent, and valuative. Examples of each type of question are:

Cognitive-Memory:	"What does fugitive mean?"
Convergent:	"Can you see any relationship between the introduction and the end of the play?"
Divergent:	"How many ways are there to look at a land form?"
Valuative:	"Should we take violence off TV?"

In spite of intensive training in using these categories, the observers found this task quite difficult. The on-the-spot distinction between divergent and evaluative questions proved especially troublesome. It was decided that the inter-rater reliability was not sufficient to allow a full analysis of this data. However, one of the categories--cognitive-memory--produced little disagreement among the raters. Cognitive-memory questions accounted for three-fourths of the questions asked. This differs little from previous

studies (such as those of Torrance) of teachers' questioning behavior. Other evidence also indicates that divergent and valuative activities infrequently occur even in the Illinois gifted classes.

Cognitive-memory questions usually call for brief single-student responses while divergent and valuative questions entail responses of greater length from many students. The pattern of teacher questioning thus operates against student participation in discussion. It reinforces the speak-when-called-upon role of the student rather than allowing him to initiate or expand upon ideas. The following section looks at the questions students ask in class.

Student Questions

Most questions asked by students were recorded during the class period visited by an observer. The most striking characteristic of student questions is their rarity. Observers recorded approximately 100 questions in the 50 classes visited. Most of the inquiries are about assignments or directions. It is extraordinary for a student's question to deal with ideas or raise a substantive issue.

In over one third (19) of the classes not one student asked a question. In almost half (23) of the classes an average of two questions per class occurred. But these questions were almost entirely for permission ("May I sit down now?") or for clarification ("Would you repeat that?"; "What do we have on Friday?"; "What if your paper is not over 10 pages?").

Nine classes remain in which substantive questions occurred. While students in this small group of classes asked over half of the questions

recorded by observers, six classes of this group account for 40 questions. Let us consider these six classes first.

One thing that characterizes these six classes is that students direct questions to other students. This did not occur in any of the other forty-four classes observed. Five of the six classes are deliberately structured to allow for student-centered discussion. All but one of them are in districts whose programs were rated of medium to high quality. Tow of these classes are included as case studies in Chapter IV: Birchville and Villa Dunes.

The Birchville class, a second through fifth grade independent studies group, accounts for 20 questions--or one-fifth of all questions recorded in the fifty classes visited. Half of these questions occurred during a "What's in the box?" inquiry session. (See case study.) Questions were also asked of several students reporting to the group about their projects. One student demonstrating a working model of the circulatory system was asked "What did you use for blood?", "What's the valve for?", "Which side of the heart chambers do you have?" The only questions directed to the teacher had to do with organization of the period.

Villa Dunes, an 11th grade American Studies class, is the other case study class among this group. During the period observed, a student panel was considering the problem: Was the U.S. justified in entering the Mexican War. Some student questions directed to the panel were "Did they actually sign a paper that they became Mexican citizens?" and "Did anybody really know what the status of Texas was in relation to Mexico?"

Other classes in this group include a fifth grade linguistics class, a fifth grade social studies class, a seventh grade team-taught language arts-social studies class, and a twelfth grade math class.

Of the nine classes with substantive questions there were three in which questions were directed only to the teacher. In two of them discussions were occurring. One of them, a fifth grade social studies class discussing persecution of Jews in the World War II era had students asking "Why did they do that?" (Kill the Jews,); "Didn't somebody try to do something about that?", "Who finally beat the Germans?" In the other class, an eighth grade Junior Great Books discussion of Robinson Crusoe, a student asked "How come it never said what happened to Friday?" The third class, eighth grade algebra, was working with graphs.

It may be unrealistic to expect students to express their inquiry into ideas in the form of questions. The fact that few questions occur does seem worth noting. Perhaps students simply adopt a passive role and do not inquire. But it may be that some factor is operating to suppress questioning behavior on the part of students. The predominate kind of student questioning shows a dependence on the teacher and primary attention on assignments and grades rather than ideas.

IN-SERVICE TRAINING

The main emphasis of the data collection for this report was on the classroom, specifically on the interaction between the teacher and students. Consequently, only slight attention was paid to the in-service training programs in the 34 districts sampled. However, traditionally in the Illinois

Gifted Program in-service training programs for teachers and administrators have been considered vital to the success of classroom programs. Therefore, pertinent data collected through interviews with teachers and reimbursement directors has been abstracted to the point where each in-service program can be given a quality rating.

But before this rating could be applied a distinction had to be made between an in-service program and training activities. By our definition an in-service program is a regularly scheduled or coordinated set of activities with clearly defined goals and procedures. Whereas training activities are occasional and sporadic events without unified, specific purpose or methodology: i.e., inviting a speaker in for a lecture in November or sending some teachers to a demonstration center in April.

Using a three point scale, it was judged that six of the reimbursement in-service programs were good, eleven were fair, and seventeen were poor--that is 50% of the in-service programs were judged poor. Again, generally the larger the district, the better the program, but the obvious increase in quality is between the small and the medium-large districts.

In general, the "good" programs can be characterized by the following descriptors:

1. <u>There is a high degree of involvement of teachers and the reimbursement director.</u> The in-service program provides for the exchange of ideas among teachers--the trying out and sharing of techniques, activities, and problems--and the reimbursement director encourages and coordinates these activities.

2. The training program receives the active support of the district. The local district provides released time, participates in structuring the activities, or may provide encouragement through incentives such as credit on the local salary schedule.

3. The content of the activities is comprehensive. That is, the training program may include discussion of research findings on the gifted and/or creative child, self-assessment on the part of teachers and administrators, along with curriculum development activities, and the introduction of new teaching methodologies.

Some examples of these "good" rated in-service programs are described below. In one program the content of the in-service training had been broader than most. Participants were exposed to the research of Torrance and Gallagher, the numerous concepts of self-assessment compiled by Rogge and Stormer, and curriculum development methods based on Guilford's model of the structure of the intellect. Presently, during in-service meetings the teachers are attempting to set forth a philosophy and a set of goals for their classroom gifted program.

Another in-service program concerns seventh and eighth grade Language Arts teachers of the gifted (as well as other faculty members) from 3:30-5:30 once a week for eight weeks. During the first two years of the program, when attendance was mandatory, content dealt with research on the gifted and self-assessment. Last year the major topic was creativity. This year the subject is creativity as it pertains to the teaching of reading. Twenty-five teachers attend these meetings (now voluntary), try out new methods, and report their results to the group.

A third example of a program rated "good" is unlike the two just described. In this case participants do not meet at a specified time to deal with a certain topic. Rather the district releases three teachers for 60 to 90 minutes daily to demonstrate for other teachers techniques they have found to be successful. Sometimes these in-service leaders meet with certain teachers in their building to work out programs and consult over problems. One of these programs concerned teachers in four different grades who decided to regroup their classes for a particular subject with each teacher taking a group of different achievement levels to enable them to better deal with the needs of gifted children. The distinguishing characteristic about this program is the active and continued support by the district's reimbursement director. Her involvement with the in-service activities has coordinated what could have become a dispersed flurry of training activities into a cohesive program.

At the other end of the continuum of good vs. poor in-service activities were seventeen districts (including the six previously judged to have no classroom program for gifted students). These programs can be described by the following characteristics:

1. Most of these seventeen programs provide only scattershot training activities. For example, some teachers might take a college course on the gifted while a few others attend workshops out of the district. Other activities might include visits to demonstration centers or a teacher's enrollment in a summer institute. This haphazard approach continues year after year with little or no structure or direction.

2. A genuine in-service program was once attempted but was aborted. This means that the district did sponsor a program in the past (either a series of meetings or a summer program of some kind), but it could be best described as a "one-shot" affair that no longer exists.

3. Regular building meetins are passed off as in-service training sessions. The school psychologist in a district might describe the personality characteristics of gifted children or a teacher may relate her first-hand experiences in working with gifted students at these meetings but the inherent informality is too haphazard for this activity to qualify under our definition of program.

4. Informal counseling of teachers by principals or department chairmen can hardly be considered in-service training. This type of an exchange among staff members is common in the daily school routine and much too informal to qualify under our definition.

Eleven in-service programs which don't qualify for a "good" or "poor" rating do provide for a somewhat coordinated set of activities with procedures and goals. However, these programs are limited by one or more of the following characteristics:

1. The time allotted for in-service programs seemed insufficient (two or three meetings per year or one 2-week institute during the summer).

2. The content of in-service meetings dealt with only one major topic. For example, in the Junior Great Books Training Sessions teachers

prepare to use this series of books with gifted children, but don't consider any of the other issues such as self-assessment, identification, etc.

3. Teachers didn't indicate that the in-service training was especially relevant to their needs or helpful in any way. Teachers appeared to be unaware that they were receiving any in-service training at all or, if they acknowledged attendance at such sessions, seemed indifferent to them or uninvolved.

4. Training was for only two or three staff members in the district. No attempt was made to involve other teachers in activities which might help them deal with the gifted children in their classes.

5. Not enough information was available to rate the program. Occasionally responses were vague or contradictory.

In general the quality of most of the in-service programs included in this study leaves much to be desired. Only 20% of the districts sampled qualify for a rating of "good"--a low percentage indeed. There are no doubt numerous reasons for these results. A few districts were indifferent to in-service training or unaware of its importance. Many more of them had no program due to lack of leadership (someone to take the responsibility for directing it). But, by far, most of the districts were simply unable to "afford" an in-service program. Specifically, they couldn't pay for substitutes which would release their teachers for training, or pay for someone to take over the job of directing activities. Consequently, many attempts fell short of meeting the criteria of a good program. Some programs never got past the planning stage. Most of the districts sampled made no effort to train their staffs for the gifted programs in their schools.

Conclusions About In-Service Programs

The examination of the in-service programs at these 34 school districts leads to three conclusions:

1. A good in-service program needs a competent director. A well-planned and executed program needs the committment of someone who is aware of the need to train personnel and methods for such training, as well as someone who has the time to organize training activities.
2. The district itself must be committed to in-service training. Districts need to provide teachers with released time for attending meetings, increments on the salary schedule, or some other incentive to participate in in-service training sessions.
3. Money should be available to districts for outside help in program planning and evaluation. These outside consultants should supplement the consultation available through State consultants and Area Service Centers.

VI. IMPLICATIONS FOR CHANGE

The Illinois Gifted Program has provided the opportunities for local districts to develop innovative programs for children who possess a variety of talents and needs. Many of these districts have used these opportunities to develop programs that encourage higher thought processes, involvement and enthusiasm by students, independence, and divergence: a stimulating intellectual environment. As a result, many gifted classes embody these standards. At the same time, however, many gifted children remain in regular classes, the great majority of which do not measure up to these standards. Therefore, the successes among the district programs should be no means sidetrack the necessity of searching for ways to develop and improve local programs.

The following paragraphs illustrate some implications for change among various parts of the Illinois Gifted Program: reimbursement centers, Area Service Centers*, and regional consultants. Efforts could occur on these three fronts simultaneously toward improving programs in those districts already involved in the Illinois Program.

First, there is a need for local districts to expand their programs for gifted students. Even districts with good programs do not provide for a considerable portion of their gifted students. Such expansion should include extending services to more gifted students within present programs of high quality and installing those programs in all schools throughout

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*Also see Chapter VIII of The Demonstration Center, Report #11, for specific recommendations about the change from demonstration centers to area service centers.

the district. Greater articulation could be developed both with other subjects the student is engaged in and from one grade level to another. But expansion should also include the development of new programs over a wide range of subject areas. It should include providing for a wider variety of giftedness.

The conditions necessary for such program development to occur were outlined in a previous report, leading us to postulate an "advocacy" model of program development. (See Advocacy Paper, Report #10.) A higher quality program is closely associated with districts that have a favorable attitude toward gifted programs, especially large school districts, and with an internal leader or advocate who is committed to developing a good gifted program. Advocacy is usually expressed in individuals who can exert opinion leadership in the district but yet are not line administrators. Most principals and superintendents have neither the time nor inclination to become actively involved in the development of a higher quality program, whereas the placement of teachers or staff administrators as reimbursement directors is associated with the development of a higher quality program. Other variables that may be influential in program development are visits from university consultants, members of the state staff, and demonstration directors. However, these outside visitors are not powerful enough to effect changes unless internal conditions, such as the existence of an advocate, are present.

Educational change is not easy, is not quick, and is not cheap. Some conditions necessary to improve local gifted programs lie beyond the direct control of the state. In some cases the best the state can do is

try to create a fertile environment for the growth of gifted programs. Essentially this means promoting the emergence of an advocate within the local district and continuing to educate the public at large on the desirability of gifted programs. Again, the most promising ground for deploying the inadequate resources of the state program would seem to be in the relatively few larger districts containing a large percentage of the student population.

The second implication for change is concerned with the quality within programs. An effort should be made to bring local programs more into line with the ideals of the Illinois Gifted Program, as exemplified in the standards used to judge local programs. This can be done effectively only by changing teacher-classroom behavior through training, and even then, mainly through "self-assessment" training. The agency that can do this is the Area Service Center since it can work directly with teachers over extended periods of time.

The Area Service Center is the coordinating agency which can recruit and train teachers for in-service programs of sufficient intensity and duration to actually change behavior. In addition to these formal training sessions, the staff of these centers will provide direct assistance to the teacher in the classroom and eventually attempt to involve more teachers in program development. Outstanding teachers and those with leadership ability would be identified during the year and encouraged to attend summer training institutes. Hopefully, when this cadre of teachers return to their districts they will become the local gifted program advocates.

A third implication for improving the Illinois Gifted Program concerns the assessment of program quality. A systematic way of monitoring reimbursement districts is needed. One approach might be to use some procedures developed in this evaluation. One fourth of the participating districts could be reviewed each year by the state consultant in each region. This would mean that each of the ten regional supervisors would review approximately nine districts per year. They could collect the kinds of data reported in the case studies and apply the standards described in Chapter IV and V to make judgments of quality.

One result of this approach would be do direct attention to the rationale and activities of each program. In some cases this intensive re-examination of intents and practices may in itself lead to improvement in programs. The kinds of information the consultants would attend to may provide some districts new insights into their program.

In a few cases the resulting report may be at variance with the district's own judgment of its program. This may encourage the district to conduct a more extensive investigation of its own. Any conflict that may develop could be considered generally advantageous since it would open a dialogue between the state and local district which would focus attention on program efforts.

The reviews of these programs produced by the consultants could be used by the Area Service Centers as another means of locating outstanding classes for demonstration and teachers for summer institutes along with those schools encountering difficulty. Selected reports could be published periodically to provide schools and the general public a view

of what is happening in gifted programs. Over four years a monitoring system such as this would provide the information necessary to have an accurate picture of the growth and annual status of the Illinois Gifted Program.

The State of Illinois should continue to encourage school districts to develop gifted programs. The emphasis should be on more comprehensive provisions amd a greater variety of services. The state should provide training programs that directly assist classroom teachers over extended periods. The status and growth of gifted programs should be monitored through a continuing assessment procedure. In addition to these three major efforts toward imporving the State Plan, there are many implications for change contained in the case studies and previous reports.

A P P E N D I C E S

APPENDIX A

DIRECTOR INTERVIEW

During this interview we'll mainly be talking about the _____ program (the one you described over the phone as being most highly developed.) This should also be the same program that, _____ is observing. The interview is fairly structured, and we will keep to this schedule as closely as possible. I and the interview both work for specification, even for details which may seem obvious. Things may come up which I will not want to discuss during the interview. I will indicate when this is the case and then record them on this sheet of paper. We can discuss them at a later time, if you so desire. At no time will I be able to give you information. You may find that there is a certain amount of redundancy built into the schedule.

1. In general, what kinds of activities are going on in the program? (Tell me how the program works.)
   a. What kinds of things do teachers do? (What do they do with the kids?)
   b. How would you explain the approach (etc.) they use in this program?
   c. What types of activities do students participate in?
   d. What would a "class meeting" generally be like? (Try to be specific as possible.)
   e. Which of the activities which you have just been describing would you consider most important?
   f. What basically are the most important materials the students are using in this program?

g. Are there any specific characteristics that materials must have in order to be appropriate for your program?

h. Were these materials purchased with Gifted funds? (*Optional*)

i. How often does the program meet? (*Optional*)

LOOK AT TAPE

2. Which of the activities described earlier would you consider appropriate for the gifted?

a. What makes this the case?

3. Can students, other than the gifted, benefit from the same type of program?

_____yes *(go to 3 a)* _____no *(go to 4)*

a. In what way(s)?

4. What would you say are the major goals for this program?

If only one goal, go to 4 b.

a. Of the goals you have just listed, which one is most important?

b. Would you give me a few examples of what the students do in order to work toward (this goal or each of these goals)?

Any other examples of what students do?

c. What do you want students to learn in this program?

d. How would you describe a successful student at the end of this program?

e. Could you give me an example of a student who is successful? (What does he do)? (*Optional*)

LOOK AT TAPE

IF DIRECTOR/TEACHER, ASK QUESTION 13-17 ON TEACHER INTERVIEW.

5. Please give a step by step description of the procedures that were used in selecting students for the program.

   a. What happened first?

   b. Then what?

6. How was the number of students to be involved determined?

7. Please give a step by step description of the way in which people become teachers in your program?

   a. What happened first?

   b. Then what?

8. Do you have an in-service training program that is related to the education of the gifted?

   _____ yes *(go to 9)* _____ no *(go to 8 A)*

8A Are teachers involved in any kinds of activities related to the Gifted Program other than classroom teaching?

   _____ yes *(go to 9)* _____ no *(go to 13)*

9. Please describe the kinds of avtivities that are going on in the in-service program.

9A What kind of activities are they involved in?

   a. Can you be more specific about the kinds of things participants do? (Can you give me a few examples of what they do?)

   b. What do participants do in a typical session?

10. Which of the activities, which you have just been describing, would you consider most important?

11. What kinds of materials are being used?

12. What would you say are the major goals of the in-service program?

    a. Would you give a few examples of what participants do in order to work toward (this goal, each of these goals)?

    b. Any other examples of what participants do?

    c. What do you want participants to learn in this program?

13. Have you had any special training related to teaching the gifted?

    If both types of program (student and in-service) - "The rest of the questions in the interview are concerned with both programs we have been talking about, your_____Program for students and your in-service training program."

14. Please give me a step by step account of how the district's program(s) got started and how it (they) has (have) developed?

    a. What happened first?

    b. Then what?

    c. Have any consultants other than any you might have already mentioned helped in any way with the development of the distric't program(s)? How have they helped?

    d. Have there been any other resources, not necessarily people, that have been influential in the development of the district's program(s)? How have they been influential?

    e. Why do you think this (these) particular kind(s) of program(s) was (were) chosen for the district? What makes this (these) particular kind(s) of program(s) appropriate for the district?

f. What program activities did your district consider incorporating in your reimbursement program, but for some reason or another were unable to?

g. Who usually is most influential in the decision making process? (On what basis are decisions usually made?)

15. Has any information been collected for the purpose of determining the success of the district's program(s)?

a. What? (Please describe what is being done to determine the success of the program(s)).

b. Could any of this information be made available to us?

_____yes _____no

16. For what principal reasons is evaluation work being done?

a. Has the evaluative information been used in any way?

b. Please explain?

17. Does the district plan to continue the program(s) as you have described it (them)?

_____yes *(if yes, go to 18)* _____no *(if no, go to 17 a)*

a. What will be different?

18. If you had one message to give to the State personnel regarding your unmet needs, what would your message be?

APPENDIX B

TEACHER INTERVIEW

First, let me say that I am here to gather information about the program here at _____. You know much better than I what is happening in your program. In this sense, then, you are the expert.

During this interview I will ask you specific questions about your class and the gifted program in general. There may be information you want to give me that I will not want to talk about during the interview. I will tell you when this is the case, and make a note of it on this sheet so that we can discuss it after the interview is completed, if you desire (use Fact Sheet for this).

At times the questions in this interview may seem out of place or repetitive, but the important thing to remember is that we need to follow this interview schedule.

I will be talking with you mainly about the class and subject area I observed today. This will include the same group of students and same subject area for other days also.

PART I:

1. How many students are there in the class I observed?
   a. What grade level(s)?
2. How much time do you spend with these students?

ACTIVITIES

3. Were the activities I observed today similar to what usually occurs in _____ ?
   (this subject area)

_____yes _____no

A1. How were these activies similar?
-OR-
A2. Could you give me a few (more) examples of how they are similar?

A. How were the activities different? *(To B)*

B. What are some (more) examples of what students do in each of these activities?

4. Of today's activities, were there any that are especially appropriate for the gifted?

_____yes _____no

A. Any others that you feel are appropriate for the gifted? *(To 5)*

5. In _____, what might I see on other days that would be
(this subject area)
appropriate for the gifted?

A. Could you give me a few (more) examples of what students do that especially appropriate for gifted?

B. What are some (more) examples of what students do in this activity?

CHECK TAPE

6. Of all these activities which you describe as being appropriate for the gifted, which do you think are most important?

A. Why do you think these are most important?

7. Of all the activities which you described as being appropriate for the gifted, are any of them beneficial for students other than the gifted?

_____yes _____no

A. Could you give some (more) examples of why this is the case?

A. What makes them appropriate only for the gifted?

8. What would you say your major goals are for this class?

(IF ONLY ONE GOAL, TO TO 10 NEXT)

9. Of the goals you have just listed, which one is more important?

10. Would you give a few examples of what students do in order to work toward this goal?

    A. Could you be more specific?

    B. Any other examples of what students do?

CHECK TAPE

11. What do you want the students to learn in this (class/program)?

12. How would you describe a successful student in this (class/program)?

    A. Could you give me an example of a student who is successful?

    B. [OPTIONAL: What does (she/he) do?]

13. Do you grade students on the activities you described earlier in the interview?

_____yes	_____no
(GO ON)	A. *How is the worth of the students' work evaluated?*

14. What does it take to get an "A"?

15. Whst would you say is the least a student must do to stay in the (class/program)?

IF TIME GO TO PART II - IF NO TIME GO TO 22

PART II *(IF TIME):*

16. Has anything happened in this class that you had not expected?

17. Have there been reactions to the class by anyone?

(Parents, teachers, other students in the program, administrators, school board members)?

A. (*OPTIONAL*: Could you tell me what those reactions have been?)

B. How have (any other) students not in the program reacted?

18. What one person has influenced you most in working with this program?

20 How does _____ spend most of (his/her) time with the
(director name)
gifted program?

A. How does (he/she) help you?

21. Have you had any special training related to working in this program?

A. Have you had any (other) training related to teaching the gifted?

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22. *Request test information.*

23. *Reactions about questionnaire, questions, anything else.*

APPENDIX C

STUDENT INTERVIEW

Directions: During this interview we'll mainly be talking about the activities that are going on in your _____class. No one will be told what you say, not even your teacher.

1. What kinds of things do you do in this class?
   A. Tell me some more.
   B. Any other kinds of things?
2. What kinds of things do you think you are supposed to learn in this class?
   A. What do you think the teacher feels is the most important?
3. Are any of these activities different than the ones you had last year? (Or in a normal classroom?)
   A. In what way?
   B. Any other differences?
4. Which of these activities do you learn the most from?
   A. What do you think makes this the case?
   B. Could you tell me more about it?
5. Do you feel you are successful in this class?
   A. What makes you feel this way?
6. Do you get graded in this class?

   (If yes...)

   A. What things get graded?
   B. Which are most important?
   C. What does it take to get an "A"?
   D. What would you say is the least a student must do to stay in the class?

   (If no, How do you know how well you are doing?)

7. Please tell me the three best things about this class?

8. If you could change three things about this class, what would they be?

9. Pretend that I am a new student coming into this school. Would you recommend that I get into this class?

   A. Can you explain? *(Optional)*

   B. How did you get into this class?

10. Is there anything else you would like to say about this class?